

Computer Network Information Security Problems and Protection Strategies

Chang Mu

Shaanxi Polytechnic Institute, Xianyang, Shaanxi, 712000, China

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Abstract: With the development and progress of computer network technology, people's life and work have undergone tremendous changes. The popularity of the network has indeed provided us with great convenience, but at the same time, information security has become the focus of our attention. Firstly, this paper explains the meaning of computer network information security and analyses its importance. Secondly, this paper summarizes and analyses the influencing factors of network information security and the main ways of information leakage. Finally, this paper gives some common strategies of computer security protection.

1. Introduction

With the continuous development of computer network technology, network and information security technology have also been further developed, such as the emergence of various anti-virus software and various information encryption technologies. However, the problem of network security cannot be fundamentally solved. illegal elements often use the network to steal all kinds of information. Therefore, the problem analysis and Protection Strategy Research of computer network information security become more important.

2. The Meaning of Computer Network Information Security

Definition of computer network: First, it is a computer system with independent operating system distributed in different locations. It uses communication lines to connect according to different topological structures and communicate according to specified network protocols, so as to achieve the purpose of sharing software, hardware and data resources. Technically, computer network includes two technologies: computer and network communication; in application, computer network includes at least two computers.

Computer network information security refers to: in the network environment, through systematic network means to achieve information integrity and related data security. The main task of computer network security is to ensure the security of computer software and hardware, prevent the leakage and loss of relevant data and documents, and ensure the normal operation of network programs. Its important elements are confidentiality, controllability, practicability and integrity. Network information security is not only closely related to the property and life security of our vast number of users, but also to the harmony and stability of society and the development of national economy.

3. The Important Significance of Protecting Computer Network Information Security

3.1 Strengthening the International Competitiveness of National Network Information Technology

With the influence of globalization of economy and information, the development of science and technology becomes more and more important. In the development of internationalization, the competition between China and some countries is inevitable. At present, in the field of network information technology, there is still a big gap between China and developed countries, so we need to introduce some foreign equipment to develop and strengthen ourselves. For example, GPS technology, which is widely used in China now, is developed and controlled by the United States.

So, when we get location information, we will also produce location information leakage. When foreign intelligence organizations use some regional information to analyze data information, they may leak important information of the country. Therefore, it is particularly important to research and develop our own high-tech equipment. In view of this problem, China is now studying and developing Beidou navigation and positioning system. Other problems like this happen from time to time. Therefore, it is particularly important to strengthen the development of information technology in China.

3.2 Maintaining the Harmony and Stability of Our Society

Today's harmonious society is the direction of social development. The security of network information directly affects the stability of society. Information leakage and other information security problems in the network era are likely to bring great property and life security risks to people, thus causing social unrest. For example, mobile phones have become an indispensable means of communication in people's lives. Besides the traditional voice communication, the functions of mobile phones include mobile payment, mobile financing, network chat tools and so on. In the process of using these functions, some illegal elements drilled holes, mobile phone fraud, because many users have low awareness of prevention, resulting in property losses, and even endanger life safety.

3.3 Guarantee the Steady Development of China's Economy

The development of computer network technology has brought great convenience to the development of enterprises, and has been widely used in medium-sized enterprises. The security of computer network information affects the survival and development of the whole enterprise. Once forced to change, the enterprise is likely to appear chaotic phenomenon, which directly affects the development of the enterprise. The development of social enterprises will have an important impact on China's economic development. For example, the computer network in an important enterprise was broken by hackers, which caused the loss of important documents, directly affecting the development and interests of the company. To a certain extent, it has caused losses to the national economy.

4. Analysis of Computer Network Information Security

4.1 Influencing factors of network information security

At present, the computer network technology has been developing rapidly, the network has brought great convenience to people, and people also have a great dependence on the computer network. Once the security of computer network appears, it will bring great influence to people's life. Therefore, it is necessary to analyze some common problems that may affect network information security, so we can better protect network information security.

4.1.1 Software vulnerabilities

At present, some of the commonly used applications in the development process, in order to follow-up better optimization, often have a certain degree of open source, and open source software is an important reason for the emergence of software funnels. Many criminals use loopholes with the software itself to steal customer information and destroy it. Therefore, the vulnerability of software itself is one of the main factors causing information leakage.

4.1.2 Virus attack

Viruses are mainly transmitted through the Internet, so as long as they are users, they are likely to be attacked by viruses. In addition, network viruses spread very fast, spread widely and have great influence, which can cause the whole computer network system to be paralyzed in serious cases.

4.1.3 Relevant personnel have poor awareness of prevention

For many computer users and managers, their awareness of network information security is poor. They often set their birthdays, phone numbers or names as account passwords, or even lend their work or other accounts to others for use. Many computer managers are not serious enough in their work and operation is not standardized enough, which also gives illegal elements the opportunity to take advantage of, and brings hidden dangers to the security of network information. Once information is stolen and tampered with, it will bring irreparable losses to economic property.

4.1.4 Problems in unprofessional Users

In the process of using computer network, many users are not professional enough or have poor security awareness, which will also bring loopholes to network security. For example, reasonable configuration and installation of firewall software, to a certain extent, can reduce the threat to the entire computer network, but some users lack protection awareness, did not install firewalls, did not do a better job of computer network security protection.

4.2 Ways of Computer Information Leakage

With the development of computer network technology, data can be obtained in various ways, in addition to the traditional copy method, data can also be obtained through data sharing. Therefore, the leakage of data has become inevitable. After investigation and analysis, the way of computer data leakage is shown in Figure 1. There are three main forms: copy and copy, data sharing and remote landing.

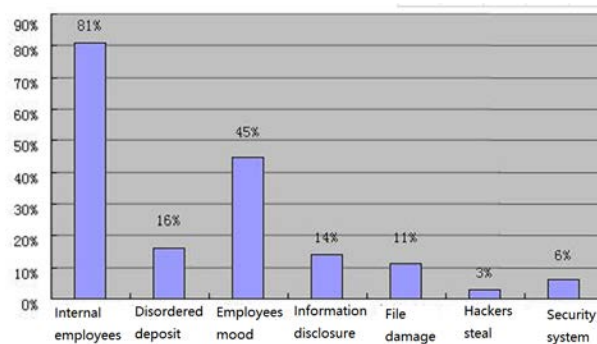


Figure 1 How Computer Information Leaks

Data leakage will cause great losses to units and individuals, so it is particularly important to take certain protective measures in the normal use of computers.

5. Protection Strategy of Computer Security

5.1 Strengthen Account Security Management

In many operations of users, they need to log in their accounts and passwords. The purpose of hackers' attacks on our network is to get accounts and passwords. Therefore, the more complex password settings are our first consideration, which can reduce the probability of password theft and avoid using birthday, telephone and other information as passwords. In addition, the password should be changed regularly in order to better protect their account information.

5.2 Installation of Firewall and Antivirus Software

Firewall can effectively restrict the access between networks, isolate the external and internal network environment, and make the external network access to the internal network receive certain restrictions, so that it can dynamically detect the operation status of the network.

In recent years, great changes have taken place in the way of computer virus intrusion, which makes the virus spread rapidly. Some computer viruses cannot be detected by the original firewall. A more comprehensive processing network can be established by using a combination of multiple

firewalls to ensure the security of the computer network operating environment.

5.3 Repair loopholes in time

Vulnerabilities are caused by some defects in computer programming. Vulnerabilities themselves do little harm to computers. However, some illegal elements will use computer vulnerabilities to interfere with the normal operation of computers, and some viruses will invade computers because of the vulnerabilities, thus making computers infected with viruses. So, we should repair the loopholes in time.

6. Conclusion

The rapid development of computer network technology brings more hidden dangers to the information security of computer network. Only by doing a better job in the protection of computer network security, can we provide greater security for network information. Therefore, people pay more and more attention to network information security. Relevant departments and researchers are increasingly involved in the protection of network information security. In the future, the development of computer network information security in our country will be better and better, the analysis of computer network security will be more in-depth, the national support system of network information security will be more and more perfect, and the work of computer network security protection will be further strengthened.

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