

Exploring Computer Network Information Security and Protection Measures

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Abstract: In the process of China's stable economic development, China's computer network information technology has also developed rapidly. In recent years, the popularity of smart terminal devices, computers and other devices has been continuously improved. Computer network technology has also been widely used in China. The demand for computers in daily life and work is also increasing. Computers have become an important way for people to obtain information. This paper analyzes the importance of computer network information security, studies the influencing factors of computer network information security, and proposes computer network information security and protection measures.

1. Introduction

With the rapid development of Internet technology, computer technology has been widely used in various industries, and the problems in computer network information security have become increasingly prominent. More and more people are beginning to question the security of computer network information technology. The use of computer network technology can quickly transfer all kinds of information, and if the confidentiality of the information transfer process cannot be guaranteed, it will cause unnecessary losses to the user. Therefore, in order to ensure that people can obtain relevant information quickly and safely, it is necessary to ensure the security of computer network information.

2. Analysis on the importance of computer network information security

The study found that countries around the world did not unify computer network information security content and standards, but relevant experts and scholars believe that computer network information security includes: confidentiality, integrity, controllability and other aspects. In short, computer network information refers to the technical and theoretical knowledge that contains the above characteristics. Computer network information security refers to the security of various information and services in the network environment. It mainly includes: computer network system hardware security, computer software security, and data information security.

In recent years, with the increasing popularity of computers, many enterprises and households are equipped with computers and the Internet, and the dependence of computers on the work of most enterprises is also increasing. It can be said that the development of computer network information technology on people's lives, work has formed a huge impact. In recent years, people can see many reports of hackers, viruses invading other computers and causing huge losses to users in daily reports, people's attention to the security of computer network information is also constantly improving. If a network information security incident occurs, it will have a huge impact on individuals, society and the country. It can be seen that ensuring the security of computer network information is to ensure social stability and national security. At this stage, factors such as viruses, hackers, and computer system vulnerabilities are still important factors that threaten the security of network information. In order to avoid information leakage of individuals, enterprises, and countries, it is necessary to strengthen the research on the impact factors of computer network information security, and make corresponding preventive measures to ensure network information security.

3. Influencing factors of computer network information security

3.1 Inadequacies in computer networks

The study found that computer network information has the characteristics of openness, which is also an important factor affecting the security of computer network information. The openness of computer network information is mainly manifested in its ability to be read and used by everyone. To meet the needs of users, the openness of the Internet will continue to increase with the needs of users. Due to the large number of computer network users, they are located all over the world, culture levels and quality levels are different, and their use of operation will reduce the security of computer networks. In addition, the computer network itself cannot resist all kinds of destructive factors is also an important factor to reduce the security of computer network information. The internet has the characteristics of openness, which is one of the main reasons for its rapid development, but if its open features are not used correctly, it will cause certain security risks. It is because of the existence of this security risk that computer network information is less secure. If these security risks are not solved in time, user information may be leaked, which will directly affect the user experience. At present, the network protocol mode adopted in our country is not safe enough, and it cannot effectively resist external interference and destruction. In addition, influenced by the professional ability and technological level of scientific researchers, the computer network that has been developed cannot effectively resist the influence of external factors. Therefore, network hackers who master key technologies and professional knowledge can exploit the loopholes of the Internet system to attack computer systems, steal or tamper with user information, which will cause great losses to users.

3.2 External factor

In addition to the above factors, external factors will also adversely affect the security of computer network information. First, the adverse effects of the natural environment on computer network information security. Natural disasters (such as earthquakes, lightning) will directly affect the security of computer network information. With the continuous development of economy and technology, the number of computer network users is also increasing (computer network users all over the world). Due to the different climatic and weather conditions in the areas where these users are located, it may affect the security of computer networks. If the computer does not have the corresponding warning equipment or protective equipment, the computer network security will be significantly reduced in the event of natural disasters such as lightning and earthquakes. If such natural disasters occur in the region where the computer network users are located, the computer hardware will be destroyed, resulting in a decrease in the security of the computer network. In short, if the computer is in an environment with excessive temperature and humidity, its hardware equipment may be damaged, which may affect the security of the computer network. Second, the adverse effects of human factors on computer network information security. In recent years, computer networks have been widely used in various industries, which is of great significance to improving people's information dissemination speed and improving the speed of business operations. Some wrongdoers have the key technology and expertise of computer network, and their use of computer network loopholes to attack other users' computers and steal information from others, these illegal acts have caused great losses to users.

3.3 Client operation error

In recent years, with the increasing popularity of computer networks, people's attention to the security of computer network information is also increasing. Computers are operated by humans, it can be seen that if there is a mistake in the user's operation, it will affect the security of computer network information. In addition, the number of computer network users is increasing, and their personal qualities and professional knowledge levels are different, so their proficiency in the operation of computers is not the same, some users do not have a computer network security awareness, in the use of computers may download or click on the software or web pages containing viruses, causing user information to be tampered with or stolen. In order to easily remember the

password, some users choose to set the network password as a simple password, so some wrongdoers can easily decipher the password and invade the user's computer, causing huge losses to the user. In addition, the computer network also has the complexity feature. Because the user's usage and habits are different, causes the computer network to be more complex, and the difficulty in solving the computer network information security problem will also increase. Again, some computer network users do not think that the computer network information security problems will cause great losses to themselves, so they do not correctly establish the network information security awareness, and do not grasp the ability to ensure the information security of computer networks (for example, users click on unknown network connections or illegal websites), this will reduce the security of users' computer network information.

3.4 Virus garbage

With the continuous development of computer network technology, the number of computer viruses is increasing, and the types of computer viruses are gradually increasing. The way of computer virus transmission is also developing in a diversified direction. If the user mishandles when operating the computer, the computer network will be infected by the virus. At this stage, the more common ways of virus transmission are: USB disk, hard disk, network disk and computer network. It is extremely harmful to computers. If the computer is infected by a virus, the computer system will be in a disorder, resulting in the computer not being able to normal operation, even if the user finds and processes in time, it takes a certain amount of time to ensure that the computer system can operate normally. In addition, after the user computer network is hacked by the virus, the data information in the computer will be stolen or tampered by the network hacker, which will cause huge economic losses to the user, and will also have an adverse impact on social and economic development. At present, China's computer network technology is constantly improving, and the scope of application is also expanding. Users can use multiple platforms to transmit data information and files. Users will produce a lot of spam when operating the computer, which will not only affect the speed of computer operation, but also reduce the security of computer network information. Some spam contains viruses, which will also reduce computer network security. Some users did not update the virus killing software installed on the computer in time, resulting in a lower computer network security level.

4. Computer network information security and protection measures

4.1 Improve account password management level

When working and relaxing, computer network users need to set the corresponding network account and set their own passwords, so as to ensure the security of the computer network. In order to avoid wrongdoers to decipher and invade the user's computer, users need to improve the confidentiality and difficulty of their account and password when setting the account and password (numbers, symbols, or English letters can be set in passwords). At the same time, the user can change the account password periodically, so as to effectively ensure the security of the computer network information.

4.2 Update antivirus software in time

Generally, computer network systems are equipped with firewalls. If users do not update regularly, computer network security will be reduced and the probability of virus intrusion will increase. In order to effectively avoid this problem and improve the security of computer network information, users need to scientifically develop a firewall installation strategy and select the appropriate anti-virus software to be installed on the computer to prevent viruses from intruding into the computer.

As we all know, the main functions of the firewall are: restrict network access, and strictly prohibit external network intrusion. This is of great significance for ensuring the security of computer network information. Therefore, computer network users need to set up a firewall to

ensure that the computer system is not infected by viruses. In addition, in order to improve the security of computer network information and ensure that the computer system can operate normally, computer network users need to use anti-virus software and firewalls comprehensively.

The main function of anti-virus software is to timely discover and process various viruses that invade the computer system, so as to avoid viruses, hackers hacking user computers, and ensure that computers can be used normally. Therefore, computer network users and managers need to purchase genuine anti-virus software and firewalls, so as to ensure that it can fully play its due role. In order to ensure the security of the computer, the user must strictly install the firewall and anti-virus software according to the relevant regulations and procedures, and update the anti-virus software or firewall according to their habits, so as to ensure that the computer information is not stolen or tampered with (If the user does not have the professional knowledge or ability, the professional needs to install anti-virus software and firewall for his computer.; users can also install anti-virus software and firewalls by watching related videos or reading related professional books). In addition, in order to promote the continuous development of computer technology and Internet technologies in China, it is necessary to strengthen the training of relevant technical personnel.

4.3 Optimize patches

When users use the computer network, corresponding data and information will inevitably be generated, and the data and information will be stored in the computer system. It is precisely because of the complexity of these data information that users have certain flaws in the use of computer networks, and these flaws are not only reflected in computer software, hardware, but also in computer operating procedures. In order to effectively solve these problems and improve the security of computer network information, users need to clarify the inadequacies of the computer network and handle it in a timely manner. Users can choose the most suitable patch to handle their vulnerabilities according to the nature and characteristics of the computer. The study found that using this method can effectively improve the security of computer network information. In addition, to ensure that the computer system is working properly, the patch should be updated regularly.

4.4 Reduce the adverse effects of external factors on computers

It can be seen from the above that both natural disasters and human factors will affect the security of computer network information. Therefore, in order to ensure the security of computer network information, it is necessary to scientifically formulate corresponding protection strategies. Since the computer operating environment will have a huge impact on its hardware devices, users need to strengthen the cleanup of the computer operating environment, so as to avoid the adverse effects of physical factors on the computer hardware devices. In addition, natural disasters such as lightning, earthquakes, and electromagnetics will also affect the quality of computer hardware equipment, so it is necessary to avoid placing the computer in such an environment. If it is unavoidable, it need to configure the necessary protective facilities (such as setting a lightning rod). In order to avoid human factors destroying computer hardware equipment, it is necessary to constantly improve relevant laws and regulations, and strengthen the punishment of criminals who invade, steal, or tamper with other people's computer network information, so as to reduce the probability of such illegal activities and improve computer network information security.

4.5 Strengthen the publicity of computer network information security knowledge

In order to enhance the security awareness and ability of computer network users, government departments need to strengthen cooperation with different media and strengthen the publicity of computer network information security knowledge, so that people can understand how viruses and hackers will affect them, and strengthen the study of relevant knowledge and operational skills to improve the professional knowledge level and operational ability of computer network users, and avoid the chance of safety accidents caused by user operation errors. In addition, computer network users also need to ensure the standardization and legality of their own operation behavior. It is strictly forbidden to click on the unknown source network connection and software, and update

the anti-virus software and firewall in time to avoid losing important information due to virus intrusion.

4.6 Establish and improve the computer network information security system

Severely crack down on hackers can reduce the behavior of wrongdoers attacking other people's computer networks. Government departments need to study computer network information security technology in depth, establish and improve the relevant laws and regulations to ensure computer network information security. In addition, government departments also need to strengthen the supervision of computer networks, and strengthen the investigation and punishment of illegal websites and software to ensure the security of the network environment, which is of great significance to enhance the security of computer network information.

5. Conclusion

In short, in today's rapid development of information technology, people pay more attention to the security of network information. Therefore, in order to promote the stable development of computer network technology, it is necessary to pay attention to computer network information security. By installing anti-virus software and firewalls, computers can be protected from viruses and hackers to ensure network information security. At the same time, China needs to establish and improve relevant laws and regulations, and strengthen the punishment for hacking and stealing user information, so as to promote the stable and healthy development of computer network technology.

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