

# Analysis of the Influence Factors and Prevention of Computer Network Information Security

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**Abstract.** With the continuous progress of computer network technology, computer network has been closely related to people's daily life. Internet with a great convenience, can help people get more information, on the basis of which, numerous shopping platform, chat platform and game platform constantly grew up in dealing with people. It can be said that the existence of the computer network is an important part of modern society, at the same time, the computer network to bring convenience to people there being some hazards that the main is the issue of information security. Due to the openness of the Internet, the user's personal information is easy to leak out which becomes a means of criminals to reap benefits, threatening the normal life of the people. This article analyzes the influence factors of computer network information security, and gives some preventive measures to promote the healthy development of Internet security, and protect the privacy of users.

## Introduction

Computer network plays an important role in all walks of life, and is also one of the important manifestations of globalization, through which we can achieve long-distance communication and business operations, at the same time relying on the development of computer networks, the various platforms affecting people's normal life. Network information security has been a problem in the development of computer network, because of the characteristics of the network itself and the popularity of the computer network, the importance of network information security being enhanced constantly. For individuals, network information containing a lot of personal factors, for the enterprise, containing important information of the enterprise, and for the country, containing a significant state secrets. So network information security is a problem that must be paid great attention to in the process of computer network development.

## An Overview of Computer Network Information Security

Analyzing from a narrow point of view, the so-called computer network security is to protect that the resources of network information system data information are not illegal to be obtained, change, leakage, to ensure information security so to maintain the stability of the computer system. Computer network information is an important part of the network, information security threatened, it means that the entire network system has been destroyed, affecting the normal and stable operation of the entire network.

Analyzing from a general point of view, computer network information security includes many features, reliability, authenticity and integrity, availability and confidentiality, which can be used as a part of computer network security, below for specific analysis

**Reliability.** Reliability refers to the reliability of the entire computer network, to ensure users can use normally and can be assured of transmission the individual or enterprise information to the network which is the basis of computer network to be able to run stably, to make clear the lack of user trust and reliance on the computer network whose application value will be greatly affected, thus affecting the normal development trend

**Authenticity and Integrity.** The authenticity and integrity of the network information refers to the information that exists in the network is not modified and deleted by others illegally, which

effectively ensure the security of user information, to prevent the problem of user information in the process, resulting in serious losses

**Availability.** Availability means that when users access information through legal channels, computer network can give a timely response, to help users to search and query information and ensure that users can get the information you want which is an important guarantee for user to rely on internet to search information

**Confidentiality.** Confidentiality refers to the user's information under normal circumstances is absolutely safe and confidential, only through normal channels and methods to be able to access, so that users can fully guarantee the security of personal information, for individuals, businesses, the country which is essential.

### **Analysis of Influencing Factors of Computer Network Information Security**

The influence factors of computer network information security mainly including two aspects of internal and external factors, the internal factors mainly are itself Internal network loopholes in the system and the relevant management personnel's awareness and work issues and the External includes the other outside personnel in the whole computer network attack damage, and thus a threat to information security.

**The Internal Factors.** Computer network in the continuous development, including the continuous optimization of the system, the system needs to optimize which means that its own existence loopholes. With the development of science and technology, problems in the current system continuing to be found, Web designers need to continuously improve the vulnerabilities existing in the network, so the itself vulnerabilities of computer network system is threatening the security of network information is one of the important factors which leads various system problems in operation process and user information loss, leakage to threats to the security of user information. while the computer network as a platform for a variety of software to provide a based guarantee, but the software itself is also a threat to the user information security, At the same time, the hardware system of the computer is the carrier of r accessing the Internet and storing the personal information the quality of the system or the damage caused by the improper use is also a threat to the security of user information. Finally, network information security awareness of computer network managers is not strong, in the network maintenance process, information security inspection and maintenance work are not in place, resulting in problems in network system running. In the meanwhile, users accessing the Internet, enter some illegal websites and do some improper operation to carry on the leakage of private information which all belong to the system, hardware and software or the threats of users as well as managers of computer network information security, which can be summarized as internal factors.

The so-called external factors mainly refer that other people through illegal means steal the network information sand threat system information security, such external factors including many aspects.

**Active Network Attack.** Active network attack refers to the lawless elements for specific information on someone else's computer network for intrusion, thus stealing or tampering with the information which directly threatens the information of the person being invaded. A lot of means of network attacks, most using the characteristics of computer networks to 'camouflage', into the computer system, with the unceasing enhancement of defense system of network security, means of network attack also changing, apt attack is in recent years a persistent network attack form, in a long period of gradual infiltration into the destination network, steal user information.

Network virus developing with the development of computer network which is said the coexistence of both, Virus spreading by the Internet, once entered the user computer, will be activated to damage system or steal information. Virus itself parasitic, potential, replication and other characteristics becoming a major problem of prevention and clear, such as the most common virus, Trojan virus, which by emails ,websites, etc. Intrude the user computer and 'listen' to the user's various computer behavior, to achieve the purpose of stealing user information, for example, stealing bank card account passwords and other information, other people's property, or software

games account password to obtain virtual interests. In a word, Virus has become a serious threat factors to the security of computer network and its own characteristics means it is difficult to early detection and prevention once infected will damage the computer, some viruses, and even difficult to remove must replace the relevant hardware

**Security Issues in the Process of Information Transmission.** The Internet, a vast network information systems, information transmission is the guarantee of the internet operation in which information security is related to the stability of the whole computer network, and its main form at the present stage is two kinds of wired and wireless. The factors that threaten the security of transmission mainly include two aspects, On the one hand, it is the fault of hardware equipment, the equipment aging or equipment transmission system problems cause information transmission errors or incomplete; On the other hand, it is the human information interception in the information dissemination channel, which leads to the information channel blocking or the emergence of fault information and other issues, which seriously threaten the security of network information

**The Threat of Phishing Sites and Other Illegal Sites.** The network information being uneven in quality, various rogue software when the user is in the absence of consciousness will introduce users to illegal websites, users browsing the site without attention will enter a variety of sites which may exist phishing sites like the usual sites. Especially those users who are not proficient in computer cannot distinguish between true and false, if information disclosure will lead to information leakage, and phishing sites will steal information, which is a malignant tumor of threat to the safety of computer information system.

## **Preventive Measures of Computer Network Information Security**

To do a good job in network information security prevention need the 'two handed grip' On the one hand is to enhance the people's attention to the importance of information security, on the other hand is a technical innovation, to take a variety of network security measures to maintain network information security.

**Enhance the Awareness of User Network Security.** With the constant exposure of various information leakage incidents on the Internet, People's attention to the security of network information being constantly strengthened, National and relevant departments should make use of this trend, do a good propagandistic job of network information security, provide relevant channels for the majority of network users to introduce and explain the knowledge, At the same time, drew up a series of methods and recommendations for the Internet users reference to help them use Internet safely, guiding them to learn to identify phishing sites and other illegal sites, and promote the slogans of surfing Internet safely and others. When the user improve safety awareness, they will not easily make the personal information revealed to some websites at random, so that can carry out leakage prevention of personal information from the root .At the same time , Users should learn come measures to protect their privacy ,and understand , master some legal knowledge of network information security, when their personal information is violated, ,should be brave and good at safeguarding their legitimate rights and interests, so that it can effectively reduce the probability of network information leakage

**Constantly Improve the Relevant Laws of the Country.** Chinese laws and regulations of information security on the Internet are not perfect which makes the illegal using the network to carry out criminal activities uncommon. With the network crime rate increased year by year, the power of the national and relevant departments to fight against the Internet is also increasing. Growing laws of network information security, and enhancing the punishment, also setting up specialized departments for the network information security to supervise and manage, and being strictly in the illegal phenomenon accordance to the provisions of the law punished, at the same time, we must continue to discover the existing laws in the leakage hole, and constantly improve the laws and regulations, do not give criminals an opportunity to exploit.

**Enhance Network Information Security Measures.** In order to protect the network information security, each large network company based on the various kinds of technical research, from the user's system to the user's browsing information then to user information transfer, we have to take a

certain amount of security measures, which can effectively prevent others from stealing user information, protect the security of information.

**Firewall technology.** Firewall technology is a kind of technology to protect computers which uses the hardware and software system of the computer to check the information flow between the computer and the network to prevent the virus from entering. Because network data flow protected must pass the firewall, the firewall will automatically diagnose, only those who are authorized by the user to allow, which can effectively prevent unauthorized users to steal information. at the same time , Firewall that is immune to the external network attacks, can effectively prevent outside the network invasion, can play a dual protection effect. . With the progress of modern science and technology, firewall technology also continuously developing, but due to the characteristics of the firewall itself, making the internal attacks or other to bypass the firewall, can't provide effective preventive effect, so that the firewall cannot completely guarantee letter Xi Anquan

**Anti-virus Software.** Antivirus software functions being a lot, its main function is to scan the computer virus, search the computer for a deeply, finding and clearing files with virus to protect computer from Virus destruction. There being Many categories of modern antivirus software, such as 360 antivirus, Rising Antivirus etc, anti-virus software is also able to monitor the activities of the computer, once finding the suspect file, will be immediately reminded, of course, virus which can be found usually is known, and For the new unknown virus but cannot have a good effect, So antivirus software does not fully guarantee the security of information, but also need to continue to improve and upgrade optimization.

**Data encryption Technology.** Digital encryption technology is used to encrypt the transmission of information to achieve the protection of information technology, when the transmission of both sides are installed professional decoding software, are able to receive information from the network to receive and decode which is mainly aimed at the protection of information security in the process of network transmission, even information stolen, they also cannot decipher, cannot get useful information, and thus effectively to ensure the safety of information, QQ software using its own encryption technology, to effectively ensure the security of QQ users.

## Summary

In the information society, the Internet having been a part of people's daily life, people enjoy the convenience brought by the Internet but at the same time enjoy the threat of information leakage. Network information security issues having seriously affected the order of the Internet, the state, society, users should pay more attention to information security, clear the impact of information security factors from all aspects to take measures to protect and prevent the network information, and promote the healthy development of the internet.

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