On the Establishment of Computer Network System Safety Management

Guoliang Chen*

Network and Educational Technology Center, Jinan University, China, 510632

*E-mail: cgl@jnu.edu.cn

Abstract. A computer network is an interactive system that connects networks around the world. It is inevitable that when users go online, they will contact many other users. The interactive nature of this connection determines the insecurity of information browsing. Therefore, a great risk will inevitably occur during the normal use of the computer network. The computer network is open to users all over the world. During the user's online process, the computer will face various threats. Hackers and Trojan viruses will attack the computer when the user browses the information to steal the user's personal information. This feature of the computer's broadness of use enhances the threats in the use of the computer. Therefore, we must strengthen safety management.

Keywords: Computer Network, Security Technology, Management

1. Introduction

Computer network security mainly includes the security of network information and the security of the network system itself. If the computer network is continuously attacked and destroyed maliciously by network hackers, it will cause the leakage of user information, the destruction of the host system and even the computer network. The paralysis of the system has caused great losses to the country, society and individuals[1]. Therefore, we must pay attention to the protection of computer network security, otherwise the network will become an extra-legal place without real use. Therefore, how to strengthen the computer network security and protect the computer system from malicious attacks by hackers has become an important issue that cannot be ignored.

2. Computer network system

A computer is a data processing system. Data can be processed and exchanged in a timely manner through the computer and rapid information sharing and browsing can be achieved through specific
network protocols. In short, the emergence of the computer has greatly helped our lives and work. In the past, many impossible things became a reality with the help of computers. The computer network is produced in the process of computer development and it has a very big effect on the expansion of the role of computers. The computer network realizes the expansion of the search resource range of the computer and the shortening of the search time[2]. The computer network system connected by the communication line realizes the rapid acceleration of resource sharing and information transmission. In the early days, the computer network was only the connection of the remote terminal and high-speed data processing could not be achieved; the second stage focused on the establishment of the computer network, which greatly accelerated the transmission of information; the third stage of the computer network realized interconnection. At the stage, the role of computer resource sharing has been paid attention and users can easily obtain related resources; the international information highway built up to now has achieved a great acceleration of information transmission and the convenience of data processing and resource sharing Both have reached a very high level. The computer network has developed rapidly after its creation. The rapid development of the computer network has placed high demands on the security of the computer network. Computer network security mainly includes two aspects: computer logical security and computer physical security. Computer logical security mainly includes complete procedures for processing information, the degree of security and confidentiality of information; computer physical security mainly includes the physical nature of computer hardware and software Security, to prevent unnecessary damage to the computer's basic facilities. Computer network security must be grasped from a global and holistic perspective, because the interactivity of computer networks determines the vulnerability of computer networks and a comprehensive understanding of computer network security can better protect the security of computer networks. The network structure is shown below.

![Network Structure](image)

**Figure 1.** Network structure

3. **Computer network security management**

In addition to firewall technology, there are encryption technologies in computer network security technology, which can ensure the integrity and confidentiality of various computer internal data. Generally, encryption technology sets the content of the received data so that it cannot be used by others. The chaotic code recognized by a person or device can only be restored after the computer user...
receives the information\(^3\). The encryption algorithm of the encryption technology determines the degree of confidentiality of the data information. Most encryption technologies are applied in the process of data content propagation. In order to obtain data information in the process of data dissemination, you must obtain the main algorithm and key key in encryption technology, because the garbled information is obtained by the algorithm transforming the data and the various types of information accepted are by the key. It is necessary to strengthen the research on encryption technology in order to enhance the security of data information transmission.

4. Analysis of computer network security facilities

4.1. Strengthen the research and development of various computer network security technologies

In the research and development of computer network security technology, we should be one foot tall and one magic high, constantly update the computer network security technology, strengthen the security barriers of the computer network protection system and control the uncertain network security risks to a limited extent. Within the degree\(^4\). For example, firewall technology, as a network protection technology that blocks various network attacks outside the computer network, requires the integration of various computer hardware devices and software to achieve the effect of improving the security performance of the computer network and information between different network devices. During the exchange, the firewall can effectively detect the ingress and egress of network information, strictly prevent attacks of various malicious file information and program codes, maintain channels for information exchange between different network systems, ensure strict control of information exchange in computers and avoid different computers. The malicious penetration and attack risks of network systems ensure the network security of enterprises and individuals. The structure of the computer firewall is shown in the figure below.

![Diagram of computer firewall structure](image-url)
Figure 2. Structure of the computer firewall

4.2. Strengthen the correct application of computer network security technology

Since the application of computer network security technology in China has not been effectively promoted in the teaching of primary and secondary schools and the application of computer equipment has only been developed in the past ten years, so many computer users are not able to master enough knowledge To apply computer network security technology, especially the lack of attention to anti-virus software. In the computer network, the penetration of computer viruses in the network is likely to cause the loss of key information during the transmission of data files. In severe cases, it may cause computer devices to crash and so on[5]. Therefore, we must pay attention to the penetration of antivirus software into computer viruses The blocking function prevents viruses from damaging data information in key parts of the computer. At the first moment of virus intrusion, it automatically uses anti-virus programs stored in anti-virus software to perform targeted removal of the identified viruses to create a good network environment.

4.3. Be alert to operational risks in computer networks

In the recent period, China's network security departments have cleared away a large amount of bad information in the network and promptly ordered rectification and closure of some network enterprises that spread bad information[6]. For example, Kuaibo, a once-famous online software company, was once punished by administrative punishment for spreading pornographic videos. However, there are still a lot of bad information spreading on the Internet, some of which contain some network viruses. Once downloaded, these bad information may cause important data in the computer equipment to be stolen, so download some on the network When file information from unknown sources should be processed with anti-virus software to ensure that there is no hidden virus in the downloaded file information, to ensure the security of computer data, at the same time, when the computer is vulnerable, it should be Download patches in a timely manner to make up for leaks, to prevent some disguised virus software from invading, causing greater losses to the computer and affecting the user's operating experience.

5. Conclusion

At present, under the severe situation of diverse computer viruses and diversified security risks, in the latest measures to ensure the security of computer networks, network isolation technology has gradually attracted the attention of the majority of computer users, this technology can greatly To ensure smooth communication of various network information and compared with other computer security precautions, network isolation technology can better achieve data storage and dissemination and ensure the normal operation of computer users.

References

[1] Dongping Fang,Yuecheng Huang,Hongling Guo,Huey Wen Lim. LCB approach for construction safety[J]. Safety Science,2020,128.

[2] Nektarios Karanikas,Aleksandar Popovich,Stephanie Steele,Nathan Horswill,Vanessa Laddrak,Tameiko Roberts. Symbiotic types of systems thinking with systematic
management in occupational health & safety[J]. Safety Science, 2020, 128.

[3] Sanna Nenonen, Sanna Anttila, Toni Hyytinen, Jouni Kivistö-Rahnasto. Considerations of safety in the development of industrial services: Matter of course or matter of chance?[J]. Safety Science, 2020, 129.

[4] Wenli Liu, Xianguo Wu, Limao Zhang, Yanyu Wang, Jiaying Teng. Structural Health-Monitoring and Assessment in Tunnels: Hybrid Simulation Approach[J]. Journal of Performance of Constructed Facilities, 2020, 34(4).

[5] Igor Tomasevic, Danijela Bursa, Kovacic, Anet Rezek Jambrak, Szendr Zsolt, Antonella Dalle Zotte, Aleksandra Martinović, Mirko Prodanov, Sowiej Bartosz, Alexandrina Sirbu, Jonel Subić, Svetlana Roljević, Anastasia Semenova, Miro Krokow, Viera Duckova, Andriy Getya, Oksana Kravchenko, Ilija Djekic. Comprehensive insight into the food safety climate in Central and Eastern Europe[J]. Food Control, 2020, 114.

[6] Bo-Young Heo, Min Jung Kim, Won-Ho Heo. An algorithm for validation of the efficiency of disaster and safety management budget investment in South Korea[J]. International Journal of Disaster Risk Reduction, 2020, 47.