Research on Network Information Security Protection Strategies in Big Data Era

Gang Xu

Yunnan Technology and Business University, Kunming, 651700, China

Abstract: In the context of the big data era, computer network information is vulnerable to security threats due to various different actors. Therefore, under the background of big data era, this paper makes a detailed study on the main problems of computer network information security and related prevention strategies.

The era of big data has become the characteristic of the development of information technology. With the development of the era of big data, computer network information in our country is also vulnerable to security threats. This paper explores the main problems affecting network information security and relevant prevention strategies in the era of big data.

1. Core Concept

1.1 Big data era

The "big data" era is based on the development of the network era. The so-called big data refers to the huge amount of network information data, and many things can be recorded in the form of data, such as chat records, video, pictures, audio and so on. In the initial stage of network technology, the speed of network transmission is slow and the amount of accumulated data is small, but now the network speed is very fast, the resolution of video transmission can reach 2K level, which brings great convenience for people to access the Internet, but also accumulates a huge amount of data.

"Big data" can construct a virtual digital world. Through the analysis of these numbers, we can understand the internal relationship between different things, and then provide us with more reference when we make decisions. Generally speaking, the era of "big data" is an information revolution, which will cause tremendous social changes.

1.2 Network security in the context of the times

As mentioned above, big data records all kinds of information of our users, such as chat records, browsing pageboy records, online shopping records and so on. The larger the amount of data, the more comprehensive the information recorded in the data. Therefore, protecting the network information security in the era of big data is equivalent to protecting our privacy. Great significance. However, in the era of big data, network information security involves more technologies and more

fields. It is necessary to cooperate with multiple technologies in order to fully protect network information security. For example, personal computers need to install more powerful firewalls to prevent virus intrusion; at the same time, network data transmission needs to be encrypted to ensure that data is not stolen by others; finally, data storage in the cloud is to use multichannel firewalls to ensure that data is "safe".

2. Risks of Information Security in the Age of Big Data

In the 21st century, network information security has become a prominent issue in social development. The information flow in the 21st century mainly takes the network as the carrier, the electronic information as the medium, and the mainframe computer as the terminal for information acquisition, exchange and sharing. The network has a profound impact on human politics, economy, culture and other aspects. However, with the full penetration and integration of the Internet into everyone's life, learning, work and social interaction, network security is very prominent. Without a secure network environment, human security can not be talked about. With the network information has become the main means of information transmission, the development of network information technology is changing with each passing day, and the progress is rapid. However, at the same time, the governance of network information security is often ignored by people, resulting in frequent loopholes in network information security, which has a negative impact on national security. Therefore, the governance of network information security has become an important aspect that countries have to strengthen. As shown in Table 1:

Table 1. Macroscopic Situation Checklist of Network Information Security from 2009 to 2010

Monitoring content	2009	2010	Amplitude of variation
Trojan Horse Control Server IP Total	609436	476926	Reduce 21.3%
Domestic Trojan Horse Control Server IP Number	445134	258623	Reduce 31.9%
Overseas Trojan Horse Control Server IP Number	164302	221003	Increase 34.4%
Trojan Horse Controlled Host IP Number	2751979	10317169	Increase 1620.3%
IP Number of Controlled Hosts of Trojan Horses in China	262414	4514312	Increase 1620.3%
Overseas Trojan Horse Controlled Host IP Number	2489565	5802857	Increase 133.1%
Total number of Bonnet control servers IP	22818	13782	Reduce 89.6%
IP Number of Domestic Bonnet Control Servers	4194	7251	Increase 72.9%
IP Number of Overseas Bonnet Control Servers	18624	6531	Reduce 65.0%
Total IP Number of Bot net Controlled Hosts	11911067	5622023	Reduce 52.8%
IP Number of Controlled Hosts in Domestic Botnets	838004	470120	Reduce 43.9%
IP Number of Controlled Hosts in Overseas Botnets	111073063	5151903	Reduce 53.4%

There are many kinds of forms of network intrusion, which require high programming ability and super independent programming level. Then, through these programs and computer intrusion

means, we can attack the system, illegally obtain file resources, steal customer information, and cause threat and damage to the computer network.

Judging from the current overall situation of Internet protection means, network firewalls are very aggressive, it is very difficult to crack and invade, so the computer network firewalls are generally not broken.

But in reality, it will not always be as expected, there will always be some defects in the network firewall, resulting in the network firewall was broken and intruded. Nowadays, with the rapid development of computer network, people have entered the era of big data, but because of the development of network, computer is vulnerable to invasion.

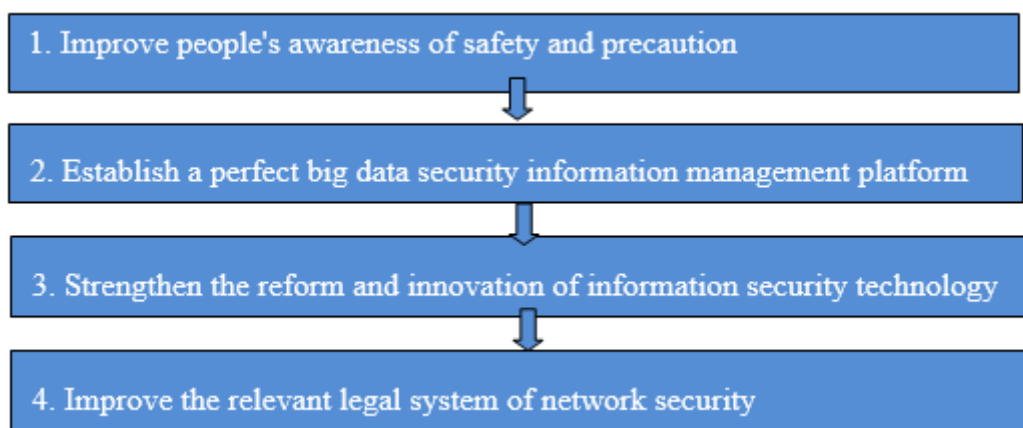## 3. Strategic Analysis of Strengthening Network Information Security Protection in the Era of Big Data

Figure 1 Strategic Analysis of Strengthening Network Information Security Protection in the Era of Big Data

3.1 Improve people's awareness of safety and precaution

In the process of using computers, many security factors can be avoided. Therefore, computer users and relevant computer network operators should enhance their own security awareness and raise people's awareness of the various hidden dangers of computer network information security. Secondly, when browsing web pages, we should avoid visiting some bad websites and avoid being threatened by computer viruses. Most computer viruses invade computer users through computer vulnerabilities, and then steal their personal information. Therefore, computer users should improve their security awareness. Moreover, the relevant staff of computer network security maintenance should also strengthen the publicity of computer network security, improve people's network information security precautions, so as to better ensure the personal information security of computer users.

3.2 Establish a perfect big data security information management platform

First, we should ensure the standardization of data types, secondly, we should ensure the standardization of data classification indicators. Thirdly, we need to develop and design highly integrated information security management tools. To achieve the standardization of data types, staff should collect and collate large data, and then standardize all kinds of large data to ensure that all kinds of data can be queried under the automatic query of the analysis engine. After

standardization of data types, these data should also be stored in the central processing system for data preservation and extraction. To achieve the standardization of data classification, staff members should form a set of standardized classification indicators which are easy to share and machine-readable, so as to facilitate batch processing. In order to ensure the standardization of data classification better and lower, staff also need to ensure that they have a sound query infrastructure. When data standardization and data classification standardization are completed, staff should also develop and design highly integrated information security management tools, so as to better maintain information security, automatically intercept Mallory and other functions, and further improve the security of information security management platform.

3.3 Strengthen the reform and innovation of information security technology

With the development of big data, in order to further guarantee the security of computer network information, computer network operators should strengthen the reform and innovation of confidence security technology, improve the security of information security technology, and better protect computer user information. Modern computer network information security technology should develop towards automatic identification security, automatic prevention of attacks and other directions, and should further improve the defense capabilities of the system, strengthen the defense capabilities of network hackers and computer viruses, so as to better create a safe operating environment for computer networks. Secondly, the staff should strengthen the research of data encryption technology, information access technology and data backup technology, and strengthen the protection of computer network information. Finally, the staff should strengthen the research on the security access rights of computer network, and strengthen the protection of computer network information from the source. In order to better speed up the development of computer network information security technology in China, major information security service factories should strengthen the reference of big data information technology from the outside world, strengthen the combination with their own technology, so as to better reform and innovate the existing computer network information security management technology, and better improve computing. Computer network information security.

3.4 Improve the relevant legal system of network security

To improve the security of computer network information in our country, we should not only improve the information security technology of computer network, but also perfect the relevant network security legal system, strengthen the protection of computer network information by law, and strengthen the punishment of some illegal elements. At present, the laws and regulations for computer network information in our country are relatively one-sided, lacking systematizes and provability. Therefore, we should formulate a perfect basic law for network information security in combination with the current relevant laws and regulations for computer network information and the current security threats to computer network information. To better protect the network information security of computer users, strengthen the attack on the illegal acts of computer network information, and create a good and safe computer network operating environment for our country.

4. Conclusion

In a word, with the development of computer network technology, the era of big data has become the trend of network development. In order to ensure the normal operation of our social life and production, we should not only improve our awareness of computer network information security,

but also strengthen the computer network information security technology. Reform and innovation, strengthen and improve the relevant network legal system construction, so as to better promote the development of China's big data era.

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