Information Security Protection Strategy Based on Computer Big Data Technology

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Abstract. Under the background of big data era, network information has become an important part in the development of modern society. At the same time, computer information security has also suffered an unprecedented impact, corporate secrets stolen, personal privacy has been exposed and other incidents emerge in endlessly. It is an urgent time to strengthen information security protection. Therefore, this paper puts forward the research work of information security protection strategy based on computer big data technology. This paper makes an in-depth investigation on the current situation of computer information security protection. According to the investigation, most enterprises think it is necessary to strengthen the information security protection, but few of them are actually applied to the work. The analysis shows that the main reason is that the information security protection is difficult, the influencing factors are complex, and the investment cost is high. In view of these problems, this paper makes an investigation on the factors affecting the computer network information security, and puts forward effective improvement measures. This measure strengthens the construction of protection software and emphasizes the cultivation of enterprise's information protection awareness. Through the relevant investigation, we can see that after adopting the information security protection measures, the enterprise's computer information security has been effectively guaranteed.

Keywords: Big Data Technology, Information Security, Protection Strategy, Anti-virus Software

1. Introduction
Big data technology is not to understand a large number of data information, but to process the meaning of these data [1, 2, 3]. Today is an era of diversified integration of massive data information by using computer information technology. It has low cost, wide dissemination and unstructured. Generally speaking, the technology not only has the storage function of media, but also can unify various data types in the actual application process [4, 5].

Big data has gradually become a very important part in the process of modern social and economic development, it has become the direction of development. However, with the wide application of big
data information and the continuous expansion of data range [6, 7]. However, although information technology is gradually applied to various fields of society, there are also a series of problems threatening the security of computer network. Therefore, to ensure the sound development of information security, we need to take protective measures to protect the network security [8, 9, 10].

The computer information security protection technology in China is still relatively backward, and the security protection performance is insufficient. Enterprises lack the awareness of information security protection. Due to various reasons, the slow progress of enterprise information security construction has brought serious security threats to the network. In the research, in view of the deficiencies in the existing information security protection, according to the actual needs of enterprises and individuals for computer information security protection. The strategy emphasizes the importance of software protection, and the work of software protection should be strengthened. Through the analysis of the relevant survey results, the computer protection software can effectively protect the computer information security.

2. Network Information Security and the Main Threats at Present

2.1. Concept of Network Information Security

Network security includes the security of the system, that is, the security of hardware platform, the security of operating system, the security of application software and the security of running services, so as to ensure the continuity and efficiency of services. Information security mainly refers to data security, such as data encryption, backup, program, etc. Network information security is a comprehensive security which combines technology security, natural environment security and human behavior security.

2.2. Connotation and Threat of Computer Network Information Security under the Background of Big Data

Among them, the diversity of computer data information under the background of big data is conducive to improving the speed of computer processing information to a certain extent. At present, the fragmentation of computer network information is more serious. The limitations of computer network information system itself will produce security loopholes in the actual information transmission process. The current communication mode has interoperability.

3. Questionnaire Survey on the Main Problems of Network Information Security In China

At present, there are still many problems in the security protection, which cannot guarantee the effectiveness of security protection, and it is difficult to comprehensively maintain the security of network information.

This study adopts the method of questionnaire survey and field interview, classifies the network information security problems. A total of 300 questionnaires were distributed in this survey, and 300 questionnaires were recovered. The effective rate of recovery was 100%. According to the survey results in Table 1, at present, China's computer network information security mainly faces three problems: software and hardware management, security authority management and lack of advanced technical measures. In the survey results accounted for 91%, 85%, 82% of the proportion, analysis that the survey results objectively reflect the defects and deficiencies of China's. in the software and hardware management, China has not formed a set of perfect management mechanism and mode. Computer network information security protection work, has not yet created a scientific security protection mode and system, cannot ensure the security of all aspects of information.

| Main problems                                | Proportion |
|----------------------------------------------|------------|
| Software and hardware management problems    | 91%        |
| Security rights management problems          | 85%        |
| Lack of advanced technical measures          | 82%        |
4. Discussion

4.1. Status Quo of Computer Information Security Protection in Enterprises and Comparative Analysis of Software Protection Effect

In the use of computers, enhance the awareness of computer security protection, regularly modify the relevant online banking password, do not click on unsafe connections at will, prevent password leakage, reduce the risk of information theft, and strengthen account management. Network service providers must actively accept the management and supervision of network information managers, strictly abide by relevant laws and regulations, and protect the rights and interests of users while reasonably developing information data. Computer network information security protection not only needs the support of various technologies. It is necessary to speed up the training of relevant talents. In the context, we should constantly improve network security technology and literacy.

According to the survey results in Figure 1, only 41% of the 300 enterprises surveyed have the awareness. However, only 23% of enterprises set up special departments or maintenance specialists to enhance information security protection, which further shows that the vast majority of enterprises are neglecting the work of computer network information security protection. Whether they are willing to make investment or personnel training plans for the enterprise's computer network information security, 73% of the enterprises said they have such plans. The analysis shows that most enterprises neglect information security in actual operation, but most enterprises are willing to strengthen the protection work in this respect after understanding the related hazards and for the sake of enterprise development.

![Figure 1](image.png)

**Figure 1.** Survey results of the current situation of computer network information security protection

According to the investigation results in Figure 2, without any protection software, the computer suffered 485 attacks, 56 system damages, 289 system vulnerabilities and 189 potential risks. Compared with the protection system, in the same network environment, the above four indicators
have been greatly reduced, especially in the aspect of system damage only once, and the potential risks have been well repaired.

4.2. Main Factors Affecting Network Information Security

4.2.1. Security vulnerability factors. In the computer network security protection, if a loophole appears in any link of the system, it will inevitably affect the security application of the whole network system. The security loophole of computer system will become the object of virus attack and the breakthrough of hacker to realize illegal purpose. In the process of receiving external data information, due to the unpredictable defects in the monitoring of various data transmission conditions, the system appears loopholes.

4.2.2. Non subjective factors. The external environment mentioned here are a number of non-subjective factors, hardware equipment in the use process, need to be in a safe and stable operating environment, when the operating environment is damaged and interfered, hardware equipment will also be damaged. In this non subjective security risk, the data stored in the hardware device will be damaged, and the data in the hardware device will be lost.

4.2.3. Man made destruction. The application of computer network is inseparable from human operation. In the process of use, if the operation is improper, it will also lead to computer security problems.

4.2.4. Network virus factors. With the development of computer technology, because many viruses have stronger concealment and greater destructive power, network virus has become an important factor affecting network security.
4.3. Computer Network Information Security Protection Optimization Measures

4.3.1. Improve the protection level of protective wall. In the network application, good firewall security technology can effectively protect the web pages users visit, and protect the entire information system through the firewall, timely intercept viruses, and provide effective security for users.

4.3.2. Use anti-virus software regularly. As the network information system itself has the corresponding protection ability, but it is not strong enough, as long as the virus invasion, it will bring huge damage to the whole system, even completely paralyzed, affecting the network information security. But in the use of professional anti-virus software, we can timely check and kill the virus.

4.3.3. The use of entry detection stick. Through this technology, computers can also be effectively protected. As long as the intrusion is detected in the running process, it will automatically start to work and implement system protection immediately. Through this technology, the computer network system can be effectively protected. Especially when the invasion is found, the actual position of illegal elements can be directly determined, so as to make early warning and stop the human invasion in time.

5. Conclusions

In the study of information security protection strategy based on computer big data technology, this paper makes an in-depth study on the current computer information security protection work of China's enterprises, and understands the shortcomings of the enterprise's computer information security protection work and the reasons behind it. In view of these deficiencies, according to the actual needs of enterprises and individuals in computer information security protection, combined with the current advanced information security protection technology, this paper puts forward the Protection Countermeasures of computer network information security under the background of big data. The countermeasures mainly focus on software construction, which highlights the importance of security protection software, and suggests that enterprises establish corresponding computer information security protection management system. Only by strengthening the training of personnel skills and safety awareness can the protection problems of computer information security be fundamentally solved.

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