

# Study on Security and Protection Strategy of Computer Network Information

Chenxiang Zhang

Suzhou Industrial Park Institute of Services Outsourcing, Suzhou Jiangsu 215123, China

kylinbaby@163.com

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**Abstract.** In this paper of computer network information security, network strategy were reviewed in this article, on the basis of all kinds of network safety measures, and the technology to carry on the analysis to Banning mechanical electronic technical computer network as an example, introduces the computer network networking strategy and the computer network information safety protection strategy. The actual operation of the computer network to the hardware, software, Internet use management rules and regulations a series of protective measures, set up for the actual situation of the network security environment, guarantee the stable operation of the network, for the education teaching provided support for the computer network construction and computer information safety protection provide the beneficial reference.

## Introduction

At present, information resource has become the most can represent a national comprehensive strength of the important strategic resources, and with the widespread use of computer network and network information transmission between the amount of increase sharply, network transmission agreement of openness and transparency to bring information security features such as inevitable threat, software bugs present, for viruses, Trojan horses hacker intrusion leave door, they are always on the network may cause serious damage, give information system and the user may bring immeasurable heavy losses. [1] How to avoid or reduce the network system damage is people have been exploring problems.

Stepping into the 21<sup>st</sup> century, informationization is more and more demanded by enterprise. People will face the problem that how to build a high-quality Enterprise Network. Enterprise information refers to the use of computer technology, network technology and database technology, business process optimization, control and integrated management of enterprise production and management activities of the various production information, effective utilization and sharing of enterprise internal and external information, thereby improving the economic efficiency of enterprises and market competitiveness [2], enterprise information related to the innovation of enterprise management, management process optimization of the reorganization, management team and innovation of managing means.

The calculator technique develops quickly and makes nowadays the social development have already cannot get away from an information network. Because the calculator network delivers of involve each realm of finance, science education, and military...etc. [3] in the information, include huge economy or national interest among them, so necessary network from each side of everyone attack stones, the network attack stones of the manifestation is also varied, like virus infection, steal the distorting of data, information delete to add an etc.. [4-5] This text is from the main technique of the flimsiness, network safety of network information safety, familiar network attack the method and counter plan, and network safety construction...etc. analyzed a current network information safety existence of key problem, and propose a solution from the technique level to the familiar network attack, hoped to pass a network safety the construction gradually get rid of a network information safety of concealed suffer from.

## Computer network's information security technology

From the basic concept and existent problem of the net information security, some digital security technologies, such as information cryptography technology, digital abstract, digital signature, digital envelope and digital credentials have been analyzed in the paper. And the application of the firewall technology in the net information security, the functions, types and system structure of the firewall technology, and the development and application of the new generation of the firewall technology have been discussed. Finally, unified the work actually, a kind of mixed firewall system has been designed. Firewall structure diagram is shown in Fig. 1.

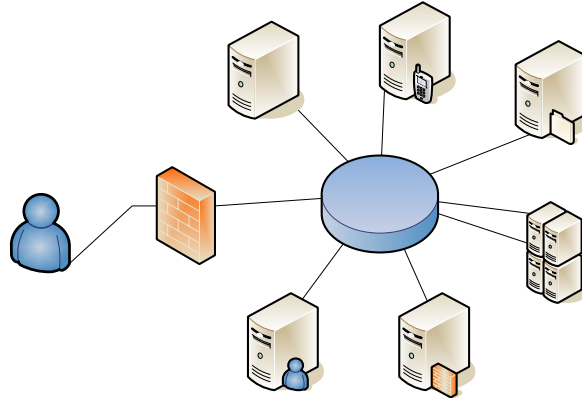


Fig. 1 Firewall structure diagram

Schematic diagram of firewall configuration is shown in Fig. 2. In this paper, the purposes of design the firewall and the questions that expecting to resolve are expounded in detail, the structure of the firewall is given, its functions and principle are stated and its formulating files are drawn up in order to achieve the related functions. There is a shielding subnet between internal net and external net. The shielding subnet can protect your network from internal and external threats, automatically bring about communication between internal and external net according to the concrete conditions, intelligently renew the filtering rules of information, automatically dispose the filtering policies, it can anti-viruses and then generate event files automatically, simultaneously, it also offers services such as Web and Mail. Schematic diagram of firewall configuration is shown in Fig. 2.

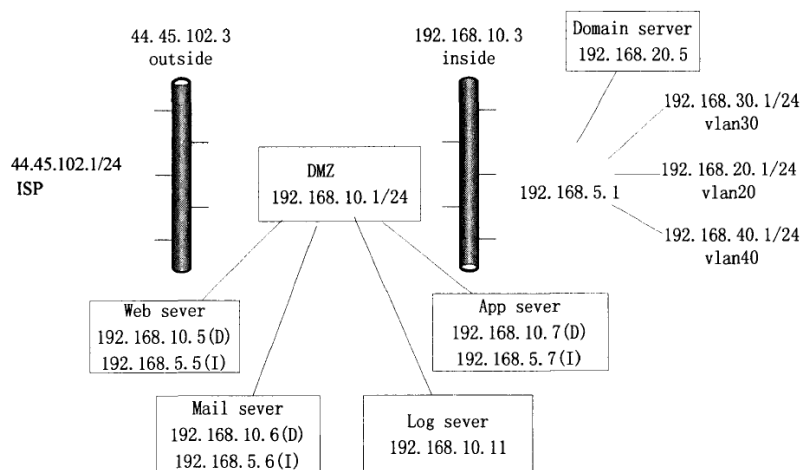


Fig. 2 Schematic diagram of firewall configuration

## The application and design of computer information security

The idea and method of multi hierarchy design for security is proposed in this paper with the basic theory of security for modern network. A detailed analysis on hierarchy is done to figure out the potential security risk under various internal levels of an enterprise by deeply study on a dummy enterprise network. According to the principle of "integrity, balance, combination of technology and management", a network security target which is fit for the requirement of enterprise is issued. And

based on it, a total network security solution is proposed. This article focuses on the setup of firewall, design and setup of in break detection system, implementation of VPN and application of access control program. It also discusses the selection, setup and management system of the network hardware. This solution has a lot of advantages, such as high practicability, strong security, good performance-to-price ratio, easily exercisable, advanced setup and well extensibility. Network topological diagram is shown in Fig. 3.

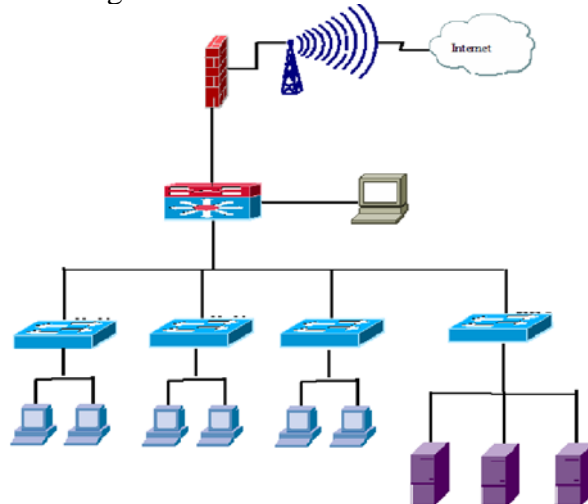


Fig. 3 Network topological diagram

The following code configuration:

```

switch>
switch>ena
switch#con
switch(Config)#vlan 10
switch(Config-Vlan10)#sw int a 0/0/1-20
switch(Config-Vlan10)#exit
switch(Config)#exit
switch#con
switch(Config)#int a 0/0/24
switch(Config-Ethernet0/0/24)#sw m t
Set the port Ethernet0/0/24 mode TRUNK successfully
switch(Config-Ethernet0/0/24)#sw t a v a
set the port Ethernet0/0/24 allowed vlan successfully
switch(Config-Ethernet0/0/24)#exit
switch(Config)#ip dhcp pool vlan10
switch(dhcp-vlan10-config)#network-address 192.168.10.0 255.255.255.0
switch(dhcp-vlan10-config)#lease 3
switch(dhcp-vlan10-config)#default-muter 192.168.1.1
switch(dhcp-vlan10-config)#dns—server 61.177.7.1
switch(dhcp-vlan10-config)#exit
switch(config)#ip dhcp excluded-address 192.168.10.1

```

This dissertation deals with security problem of public network information system. Aimed at the threat faced by information system security and accorded to the relevant standards, laws and regulations, following aspects such as initiative protection, active responding, website monitoring and controlling, legal control are proposed. Initiative protection carries out security measures through information system rank protection, optimizes the allocation of resources and improves protection capability by researching the grading and testing of information system rank protection. However, the information security incident is unavoidable even in the information system protected by ranked protection and measures must be taken for active response. Active response is try to find and tackle information security incident in order to minimize the losses by monitoring and responding the

information security incident combined with the formulation of contingency plan and joint action system. Because the technique and management problem, detrimental information may leak out onto the public network by breaking through the monitoring facilities of security incident. By researching the information content monitoring system to increase monitoring efficiency, detrimental information can be found quickly and tackled legitimately to stop the proliferation and prevalence. All above measures must under the control of laws and regulations and law is the strongest means to suppress and crack down on cyber crime. Present legal system is researched to seek for better support of laws on formulation and implementation of security management measures of information system and to keep watching cyber crime more efficient or crack down on cyber crime more severely in order to enhance the guarantee capability of information system security. The improved structure of the network topology is shown in Fig. 4.

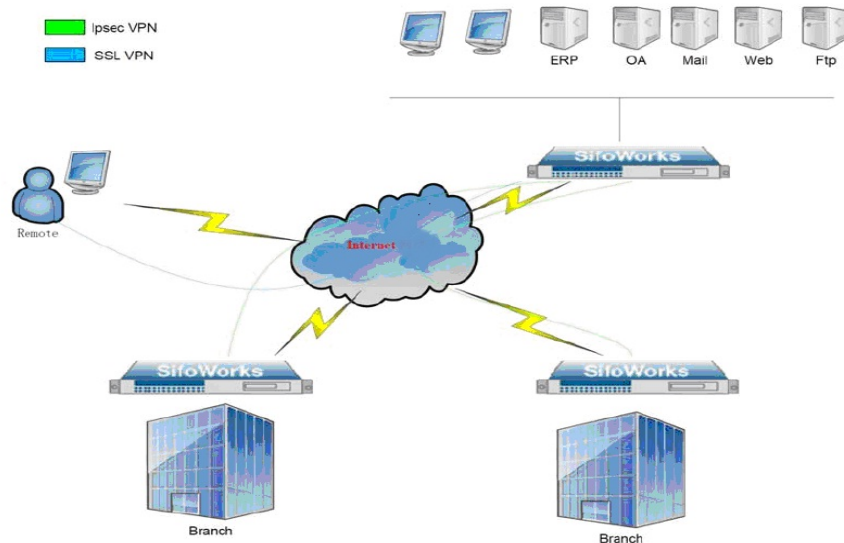


Fig. 4 The improved structure of the network topology

## Conclusions

This topic takes various mainly technical theory of network safety as instruction, the network safety of different type is concealed to suffer from and attack stone the means as object, gradually realization appear a problem of should to the strategy. The research method adopted is to check the latest cultural heritage and data, carry on in the small scaled area net laboratory in bureau different carry out and guard against, and get the result sorting of become a thesis to announce and then apply to realistic network environment of theory and technique got in, and constantly take into to practice to observe in the fulfillment in the information system.

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