

Firewall architectures and techniques a study on the high speed network security ...

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Firewall Architectures and Techniques: A study on the high-speed network security they provide
INTRODUCTION 1 Introduction to the problem being tackled, and the rationale behind choosing the problem

With the fast development of Internet and enterprise networks, security becomes an important concern to companies all over the world. There are variety of tools and techniques to break the security of the intranet network, so it becomes more and more difficult to protect the network of an enterprise that is the mission of network firewall.

1. 2 Introduction to the project

The project is intended to describe and evaluate firewall architectures and techniques and network security they provide. The firewall is the central issue of the network security policy of the enterprise that defines procedures to protect the network and its contents and users from loss and damage. Different firewall architectures and techniques provide different correlation of performance vs. security. When considering alternative firewall technologies, a common question is " what are the trade-offs between performance and security" (Cisco Systems, 2002) To answer to this question, various firewall architectures should be regarded and analysed.

1. 3 Introduction to the envisaged artefact

Various aspects of network security are explored, such as security policy, bastion host, packet filter, proxy server, network address and architecture. (Technology Investigation Center, 2002) There are four main generations of firewall architectures: packet filters, circuit level firewalls, application layer firewalls and dynamic packet filters. Also a number of firewall products exist from various producers.

2. REVIEW OF PROGRESS

2. 1 Statement on the appropriateness of the current objectives for the project

A variety of network threats exist, such as network packet sniffers, IP spoofing, password attacks, denial-of-service attacks or application layer attacks. Therefore network administrators are working hard to protect their networks using various tools that help them to test and improve network security. Firewall takes the central place among such tools restricting access between a protected (internal) network and the Internet or other networks.

2. 2 Description of the strategy being used to pursue the project

There are 3 global stages of the project: research, analysis and writing recommendations. Typical project plan for firewall architectures and techniques includes:

- List of services delivered over the Internet to state agencies

- List of desirable firewall features

- List of firewall products and their ability to be configured to provide desired features

- Process documentation, test procedures, results and analysis

- Glossary of terms and acronyms

- Index of Reference Materials

- Web accessible repository of information suitable for the public

- Communication of results to interested parties

- Identification of needs for further investigation of firewalls or related issues

(Technology Investigation Center, 2002)

2. 3 Summary of the progress so far

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After beginning of the project research process is conducted. Results analysis is done then and recommendations are given.

It is assumed, that research process takes about 2 months, analysis takes another 2 months and 1 more month is needed to produce recommendations.

2. 4 List of the difficulties encountered and how these were tackled/overcome

One of the most important problems using firewall is its ability to resist network attacks. Another valuable issue is firewall performance, or speed of network traffic filtering. Modern commercial firewalls provide

2. 5 Description of how the project is being supervised by the supervisor, and any changes preferred by the student.

The project has three main parts: research, analysis and writing recommendations. It is assumed that student provide supervisor each part of the project with brief report about the work done.

References

" Evolution of the Firewall Industry". Cisco Systems, Inc. 28 Sept. 2002. 8 Dec. 2005 " Firewalls". Technology Investigation Center. 13 Feb. 2002. 8 Dec. 2005 " Firewalls". SecurityTechNet. com. n. d. 8 Dec. 2005 Northcutt, Stephen, Zeltser, Lenny, Winters, Scott, Fredrick, Karen and Ritchey, Ronald W. Inside Network Perimeter Security: The Definitive Guide to Firewalls, Virtual Private Networks (VPNs), Routers, and Intrusion Detection Systems New York: Sams Publishing, 2002
Tett, Mark. " The best firewall is". Technology & Business magazine, ZDNet. 8 Aug. 2005. 8 Dec. 2005

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