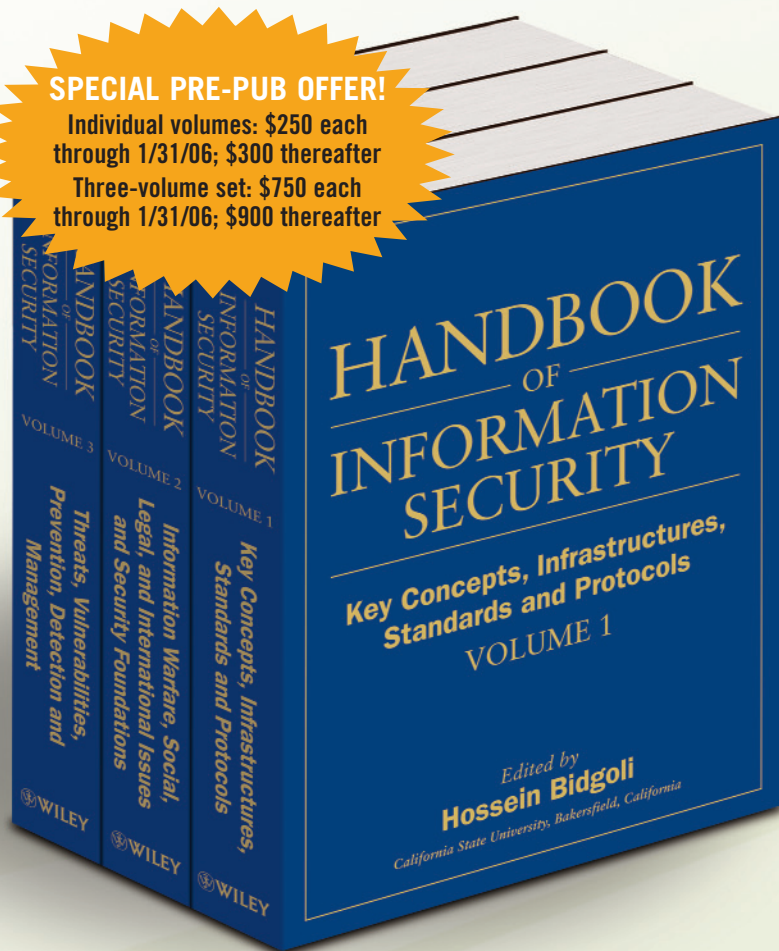


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INTRODUCTION

When an organization or individual links to the Internet, a two-way access point out of and to their information systems is created. To prevent unauthorized access between the Internet and the private network, a specialized hardware, software, or software-hardware combination known as a firewall is often deployed.

Overall Firewall Functionality

Firewall software often runs on a dedicated server between the Internet and the protected network. Firmware-based firewalls and single-purpose dedicated firewall appliances are situated in a similar location on a network-based firewalls. All network traffic entering the firewall is examined and possibly filtered, to ensure that only authorized activities take place. This process may be limited to verifying, and possibly filtering, the source, time, date, day of week, participants, or other criteria between the inside or "dirty" network. They are also used, although less frequently, to separate multiple sub-networks so as to control interactions between them. Figure 1 illustrates a typical installation of a firewall in a perimeter security configuration.

A common underlying assumption in such a design scenario is that all of the threats come from the outside network or the Internet, but many modern firewalls provide protection against threats that could result from internal configuration errors, viruses, or experimental implementations. Research consistently indicates that 70-80%

Advantages

- When properly configured, firewalls can be an effective security resource.
- Firewalls can protect sensitive data.
- Firewalls can protect against unauthorized access.

Disadvantages

- Firewall can be a single point of failure.
- Firewall can be a bottleneck.
- Firewall can be a security risk.

Disadvantages include the following:

- Increased processing load requirements
- Single point of failure for security devices
- Increased device complexity
- Potential for reduced performance over customized solutions

Other Functions

Some firewalls also offer such functions as:

- VPN—Virtual Private Networks. VPN functionality, allowing secure communication over the Internet, was typically provided by separate, dedicated devices. VPN traffic would have to be decrypted from the VPN tunnel and then passed through a separate firewall for filtering. By combining the VPN functionality with the firewall functionality on a single box, the process is somewhat simplified.
- Usage Monitoring, Traffic Monitoring, and Traffic Logging—these functions provide usage statistics that can be valuable for capacity planning and also provide information to troubleshoot problems or spot potential abuse.
- Protection against some forms of IP address spoofing
- Protection against Denial of Service attacks

Domain filtering A firewall's ability to block outbound access to restricted sites

Dual-homed host A host firewall with two or more network interface cards with direct access to two or more networks

Firewall A network device capable of filtering unwanted traffic from a connection between networks on the data-link, network, and application layers that work as a barrier between an internal network and an external network

Internal firewall A firewall that includes filters that work as a barrier between an internal network and an external network

Multitiered DMZ A DMZ that segments access across multiple layers of firewalls

Network address translation A firewall's ability to translate between private and public globally unique Internet Protocol addresses

Packet filtering gateway A firewall that allows or blocks packet transmission based on source and destination Internet Protocol addresses

Port filtering A firewall's ability to block or allow packets based on transmission control protocol port number

Proxy server Servers that break direct connections between clients and servers and offer application and circuit layer specific proxy services to inspect and control such communications

Screened subnet Enterprise firewall architecture that creates a DMZ

Stateful firewall A firewall that monitors connections and records packet information in state tables to make forwarding decisions in the context of previous transactions

Trusted gateway In a trusted gateway, certain applications are identified as trusted, are able to bypass the application gateway entirely, and are able to bypass the connections directly rather than through the application gateway

REFERENCES

REFERENCES

- Air gap technology. Whale Communications Web site. Retrieved from http://www.whalecommunications.com/ir_0300.htm
- Canavan, John E. (2001). *Fundamentals of network security*. Boston: Artech House.
- CERT Coordination Center. (1999, July 1). *Design the firewall system*. Retrieved from <http://www.cert.org/CheckPointSoftwareTechnologies/0053.html>
- Stateful inspection firewall technology. Tech note. Retrieved from <http://www.checkpoint.com/products/downloads/StatefulInspection.pdf>
- Edwards, J. (2001, May 1). *Unplugging cybercrime*. CTO Magazine. Retrieved from <http://www.ctomagazine.com/archive/050108development.html>
- Goldman, J.E., & Rawles, P.T. (2001). *Applied data communications: A business oriented approach* (3rd ed.). New York: Wiley.
- Hurley, M. (2001, April 4). *Network air gaps—drawbridge to the backend office*. Network air gaps—drawbridge to the backend office. Retrieved from <http://rtr.sans.org/firewall/gaps.php>
- Keeping a safe distance. (2001, October). *Enterprise* online. Retrieved from <http://www.enr.com/enr/online/2001/oct/keeping.html>
- NetGap. (n.d.). *Spearlhead Security Web site*. Retrieved from <http://www.spearheadsecurity.com/products>
- Scheer, Steven. (2001, January 10). *Israeli startup may thwart Internet hackers*. InfoWorld. Retrieved from <http://tagging.infoworld.com/articles/010101/010101hnmwlr1xnm1zr>
- Sender, J. (2001, January 10). *Israeli startup may thwart Internet hackers*. InfoWorld. Retrieved from <http://tagging.infoworld.com/articles/010101/010101hnmwlr1xnm1zr>

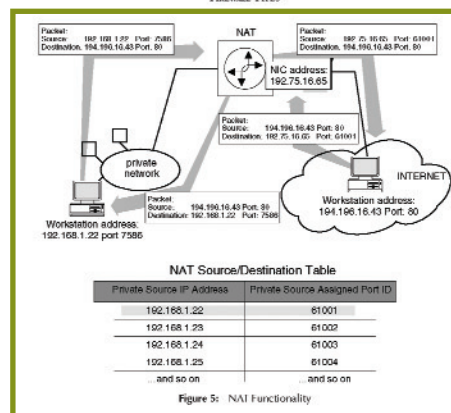


Figure 5: NAT Functionality

Illustrations
throughout

Chapter-at-a-glance
for your convenience

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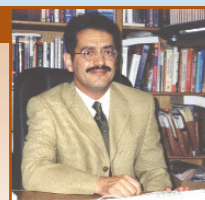
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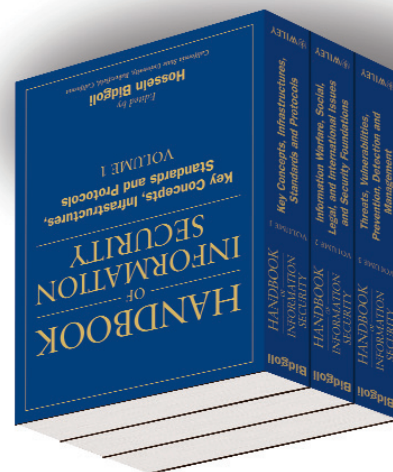
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