

# *Intro to FIREWALL software and IP Addresses*



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# *WHAT is a Firewall ?*

**Firewall is intended to protect your computer and files from being accessed by *un-authorized parties* across an network ... or the Internet.**

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**A Firewall can permit *limited access* to your PC from the Internet, allowing *approved* traffic in and out .... according to a thought-out plan.**

- Software firewalls
- Hardware firewall

# *HOW is a Firewall different from an Anti-Virus program?*



## Anti-Virus Software

- Trojan Horses
- Worms
- Can delete your hard drive ( e.g. C:\delete \*.\* )

# *HOW is a Firewall different from an Anti-Virus program?*

## Anti-Virus Software

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- Delete your files ( e.g. c:\ delete \*.\* )

## FIREWALL Software or Hardware

- Trojan Horses
- Access to your data, like password and credit card # s
- Run programs like D.O.S. from your computer

# COOKIES



Cookies can be turned OFF\*

Under IE 5 ( and 5.5)

==> Tools/Internet Options/Security/Custom Level

\* Some on-line buying sites like E-BAY require COOKIES to be turned ON... during the session

# *WHO needs a Firewall?*



- *CABLE MODEM ISP USERS \**
- *D.S.L. ISP USERS \**
- **Dial-Up ISP Users**

*\* Fixed IP address ... AND constantly on-line*

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*ROAD Runner has offered special conferences on the need to use  
Firewalls on your personal computer*

# *Security Threats*



- Personal files accessed (like credit card #s , tax files)
- CODE added to your PC to watch what you type and where you go on the WWW
- Exec/Com files can be added to your PC to run attacks like : Denial of Service (DOS) at preset date and times. ( your PC connects to the internet and runs this virus like code.

# *Internet resources on Firewalls*



- Home PC Firewall Guide = [www.firewallguide.com](http://www.firewallguide.com)
- Great Circle Assoc. = [www.greatcircle.com/gca/tutorial/bif.html](http://www.greatcircle.com/gca/tutorial/bif.html)



# *HOW MUCH does a software Firewall software cost?*

**Firewall software cost ? = FREE to \$ 70**

**FREE : ZoneAlarm <download only> FREE for personal use and non-profits groups. Top rated Firewall program along with ZoneAlarmPro.**

**\$40 : ZoneAlarm Pro <download only> ( 1.7 MB )**

**\$50 : MacAfee Internet Guard Dog**

**\$60 : Symantec Norton Personal Firewall \***

**\* Some rebate *may* apply , for up-grades, etc.**

# ZoneAlarm



- **FREE**
- Down loaded 6 million times !
- Works on Windows 95 / 98 / Me / NT / 2000
- Lots of positive software reviews

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*Review Example: “ZoneAlarm is a tour de force.*

*This product is perfect ...and stunning”.*

*John C. Dvorak - PC Magazine*

# *Firewall Questions*



- 1. How do I know if I need a Firewall?**
- 2. How do I know if my Firewall is effective?**

# *Firewall Questions*

## QUESTIONS

1. How do I know if I need a Firewall?
2. How do I know if my Firewall is effective?

## ANSWERS:

- <http://www.grc.com> Gibson Research - LEAK TEST
- <http://www.grc.com/files/leaktest.exe>
- [www.firewallguide/test.htm](http://www.firewallguide/test.htm)

*They look for OPEN 'PORTS'*

*and the ability to see ports and change them*

# *How do Firewalls work?*

**An effective FIREWALL**  
*makes your PC invisible*  
**to the outside world ( cannot be seen)**

- Ports are blocked
- Open ports not found
- You have total control over what happens and what and by whom

# *What is my exposure?*

Cable Modems & DSL Users = HIGH Exposure

Dial-UP ISP users = Low Exposure \*

- \* kids/geeks just 'looking around' for OPEN PCs
- \* Marketers trying to collect information about you
- \* Cable Modem and DSL are much easier marks and more productive to attack

# *Internet Protocol (IP) addresses*



- **FIXED I.P. ADDRESS**

... used for Cable Modem & DSL Users

- **DYNAMIC I.P. ADDRESS**

... used by most ISPs. New IP addressed for each connection  
(each session)

# *Why don't ISPs give everyone a fixed IP address.. The way they used to?*

## I.P. ADDRESSES ARE FINITE !

- $2^{32} = 4,294,967,296$  addresses ( 32 bit )
- Limited by I.P.4 (version 4)
- FUTURE = I.P. <sub>NG</sub> \* (Version 6) will resolve this limitation

\* NextGeneration



# *IP Addresses - continued*

<u>CLASSified IP Addresses</u>				<u>% of Addresses</u>
Class A	/8	$2^{31}$	2,147,483,648	50 %
Class B	/16	$2^{30}$	1,073,741,824	25 %
Class C	/32	$2^{29}$	536,870,912	12.5%

Called “slash 8” for /8

# *Sample IP address*

Bit 0			Bit 32			
10010001	.	00001010	.	0100010	.	00000011
145		10		34		3

145 . 10 . 34 . 3

*For more information go to: [www.3com.com/nsc/501302.html](http://www.3com.com/nsc/501302.html)*

*Hackers beware !*



**Don't MESS with I.S.P. pros !**

Don't even think about testing your ISP for security holes !

ISP can and will SPAM hackers with D.O.S and other measures