

Security & Privacy on the Net

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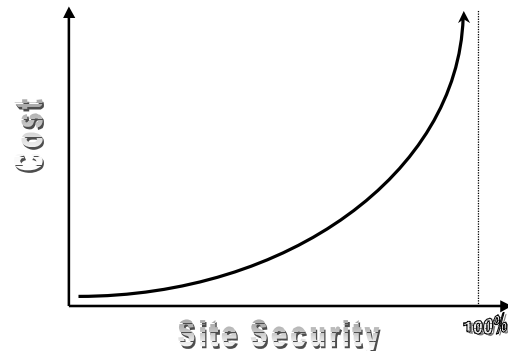
Agenda

- What is implied by “secure”?
- What is implied by “private”?
- Security on the Internet
- Securing your Networks and workstations
- Privacy on the Internet
- Maintaining your privacy

Security

- What is it?
 - An ability to restrict access to data and programs and other computer resources on a system to people and machines of your choice.
- What does absolute security mean?
- Do you know of an absolutely secure site?
- Cost versus value to you and potential intruder

Cost Versus Security of Site



Levels of Security

- Attempts to secure information can take place at different levels
 - Network level
 - Workstation level
 - Application level
- Access control can be restricted to
 - Networks
 - Workstations
 - Users
 - Applications

Security Planning

- What needs to be secured?
 - Data, programs, etc.
- What do you need to secure against?
 - Hackers, careless users, browsers, intentional access, pranksters, viruses, etc.
- Security plan based on cost and exposure
 - control access
 - recover from security breach
 - action plan when breach is discovered

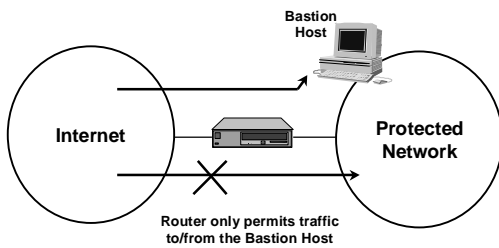
Firewalls

- A system (or group) that enforces an access control policy between two networks.
 - Includes mechanisms to block and permit traffic between networks. For example,
 - permit e-mail only from outside, permit access to a single machine in the network, etc.
 - do not permit access to certain services from outside (e.g., ftp).
- A big deal these days as firms connect their internal networks to the Internet.

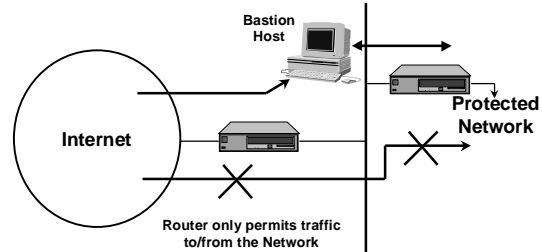
Firewalls

- Frequently is a special computer set up for this purpose alone
 - has special software that
 - enables an administrator to set up access controls
 - enforces the access controls set up by an administrator on all potential traffic across the networks
 - Will not protect against viruses
- Types of Firewalls
 - Network level
 - Application level

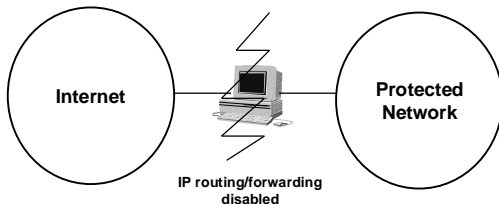
Screened Host Firewall



Screened Subnet Firewall



Application Level Firewall



Security Levels

- Network access
 - Firewalls
 - Network operating systems
- Workstation access
 - Workstation OS
 - Access/security software
- Application access
 - restrictions based on passwords or IP addresses
 - restrictions on users or groups, on resources

Privacy

- Who is watching you?
 - Your boss
 - Your ISP
 - Your school
 - Government
- How easy is it?
 - Your mail typically is logged
 - Your use of the Web is logged by the servers
 - Your use of other services may be logged
 - It is easy

Privacy

- Why all the snooping?
 - Security concerns
 - loss of productivity
 - liability concerns
- What are your rights?
 - 1986 Electronic Communications Privacy Act
 - prevented law enforcement agencies from intercepting electronic communications
 - provides an exception for the provider of the service
 - has been interpreted to include your employer

Privacy

- What are your rights?
 - What about your right to privacy
 - US constitution does not guarantee that; some states do, but that has not helped.
 - Company policies
 - some companies now have stated policies in place

Privacy

- What do the courts say
 - your boss can keep a copy of every message you send
 - don't disclose corporate secrets via e-mail
 - don't curse your boss in your e-mail

Privacy

- How can you protect your privacy
 - delete mail as you read it
 - use a private account for private mail
 - use an anonymous re-mailer
 - ask your boss about privacy issues
 - encrypt your messages

Summary

- The importance and cost of security
- Different ways and levels of security
- Firewalls and their importance
- Privacy; the issues, how they are dealt with and what can be done