Mar 30, 2005 -- Lecture 26

22C:169
Computer Security

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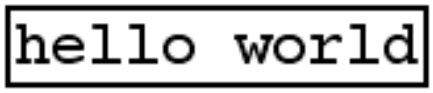
Network Threats

The obvious

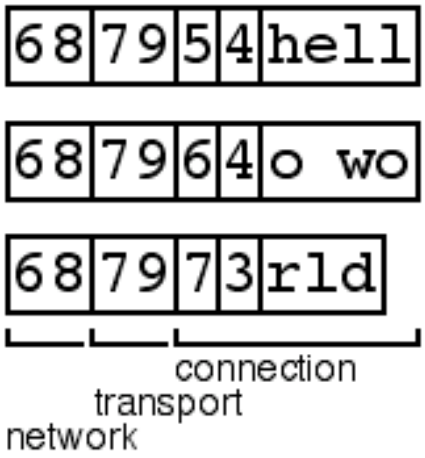
Wiretaps

interception of transmission
requires access to network medium

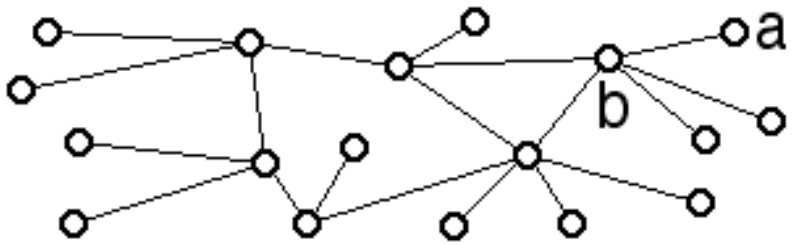
The data



What is sent



Topology

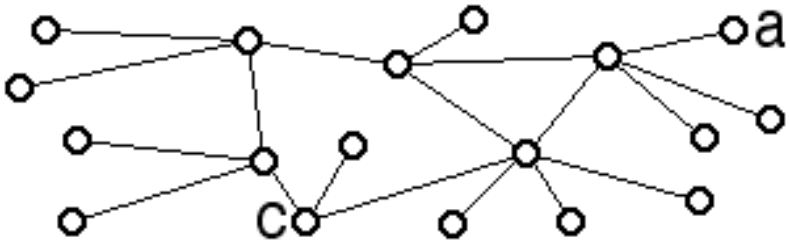


Suppose many machines talk to a
ping messages "are you there"

Service through b can be crippled
basis of a ping attack

Denial of Service to a
and all other users of b

More topology



Suppose someone broadcasts

c is on the fastest route to a!

network routing tables get updated.

Allows c to

Censor or monitor traffic to a

Allows others to

Create bottleneck at c

Recruitment

How does attacker get hosts to send pings

Social engineering

Get all your friends to ping Fred

Trojan horse attack through e-mail

Click on the attachment for XXXfun

Virus or worm attack

An insecure operating system on a network can threaten the integrity of the entire network!

A Major Problem Today

Viruses and trojans

- *used to recruit hosts to send spam*

Spam frequently comes from hijacked hosts

Could prosecute spam advertisers for

- *theft of computing resources*
- *hacking into computers not their own*

Simple solution?

- *Ban word, office, windows, express ...*
  - A bit drastic

Defense

Social engineering

don't respond to requests to ping

don't click on attachments, ever!

Universal coverage difficult.

Someone will ignore your advice!

Anti-virus software (and anti-trojan)

interferes with recruitment

The arms race will never end

because of computability limits

Firewalls to partition the network