Security - Legal Issues

Announcements
- Good faith paper (due next Tuesday)
- Lab due Wednesday
- Next lab up today
  * read by next Tuesday
  * due after Easter
  * checkpoint next Wednesday
Types of Computer Crime

The DOJ categorizes cyber crime based on the role of the computer:

- **Target**: data & system integrity, confidentiality, privacy, availability
  - **DDOS**

- **Storage**

- **Communication Tool**: sale of illegal items, fraud, gambling
International Cybercrime

- Illegal Access
- Illegal interception
- Data interference
- System interference
- Misuse of devices
- Computer forgery
- Computer fraud
- Child pornography
- Infringement of copyright
- Attempt & aiding or abetting
Crime stats

(table in book)
Challenges to law enforcement
- Investigation requires technical expertise
- Lack of resources
- Global scope in many investigations
- Lack of collaboration & cooperation
Case study: Kevin Mitnick

Mitnick actually committed many computer crimes:
- 1983: While a student at USC, broke into ARPANet. Gained access to Pentagon. Spent 6 months in juvenile center.
Case study cont:

1994: Mitnick decided to attack another security expert, Tsutomu Shimomura. He hacked his personal computer using IP spoofing and TCP sequence number prediction. (Show tcpdump)

Shimomura's firewall detected this, and he traced it back to Mitnick

Decided to get back at him
Shimomura offered to help the FBI, but was given authorization to use hacking.

This chase lasted 3 months.

Finally, in Raleigh, Shimomura roamed the streets with a radio-detection unit on a van, since he was able to trace Mitrokhin's connections to a Sprint cell phone.
Property

In the US, 3 types:

1. Real property (land + things permanently attached to land)

2. Personal property

3. Intellectual property
Intellectual Property

3 main types are given legal protection

① copyrights: protect tangible expression of idea (not idea itself)

② trademarks: a name, symbol, word, or device used in trade to indicate source of a good (also service marks)

③ patents: "the right to exclude others from making, using, offering for sale, or selling" an invention
Examples

Copyright: literary works,
musical works,
architectural works,
software related works

Patents: utility design, or plant
(Most relevant - RSA)

*Expired in 2000*
What is protected?

Software: mostly under copyright, although patent is possible

Databases: copyright

Digital Content: copyright

Algorithms: patent
Legislation: DMCA, 1998

- Strengthens protection of copyrighted materials in digital format

Encourages copyright owners to protect works by:
- preventing access to work
- preventing copying of work

“No person shall circumvent a technological measure that effectively controls access to a work protected under this title.”
So you cannot decrypt content or manufacture, release, or sell devices which do so.

Exemptions

- Fair use
- Reverse engineering (for interoperability)
- Encryption research
- Security testing
- Personal privacy
DRM - Digital Rights Management

DRM refers to systems or procedures that ensure holders of digital rights are clearly identified and get paid.

No single standard for this.

Generally, a distributor encrypts the content at a license must be purchased from a clearing house.
Case Study: DID Jon (Jon Johansen)

A famous "cracker": not interested in hacking computers.

In 2001, started making a name by posting methods to circumvent DRM.

In 2003, wrote QTFairUse, a program which could strip DRM data from iTunes purchases.

Most recently, focused on iPhones - first person to use an iPhone without subscribing to the mandatory carrier.
Privacy

European Union Data Protection Directive, 1998:

- Organizations must notify individuals about personal info collected, as well as uses and choices.
- Consent (for 3rd parties)
- Consistency
- Onward transfer
- Access
- Enforcement
- Security
US Privacy

Privacy Act of 1974
governs storage, dissemination, & access
of personal information gathered by
the government

Other legislation:
- banking
- credit reports
- medical & health insurance info
- children's privacy
- electronic communications
Ethical Issues in Computing

A huge area—go take the class!

Case study: Jailbreaking
Your assignment

We're going to do a case study discussion next Tuesday in class. (no extensions)

Please bring a 300-word essay, which I will be participation.
(So you don't have to be so careful.)

4 sources of info
(no Wikipedia)
2 Sources provided, find at least 2 more.

(No Wikipedia!)

Questions:
- Is it permissible for Sony to prevent people from jailbreaking the PS3?
- Is it permissible for members of Anonymous to perform DDoS attacks against Sony as an act of retribution?
- Did Hotz have a responsibility to the hacker community?