



Your Privacy in Jeopardy

Firewalls

- You probably have a *firewall* running on your computer.
- A firewall is a device or program that prevents unauthorized access from the network and permits legitimate access.
- Windows has a firewall built into it, which you can choose to use or not. Many commercial products (Norton, McAfee, etc.) have their own firewalls.
- It also is possible that your cable/DSL modem has a firewall built into it.

The Cloud

- With a firewall in place, your data is safe from undesired access, right? Not necessarily!
- Some of your data may be stored *in the cloud*, which means that it is stored not on your computer, but somewhere on the Internet.
- Whenever you access data that is stored in the cloud, it probably is indistinguishable from access to data stored locally on your computer.
- One of the most common examples of data stored in the cloud are emails on a *Yahoo! Mail* and *gMail* accounts.

- Advantages of cloud storage:
 - It takes up storage elsewhere, not on your hard drive.
 - Generally, the data is accessible from any computer that you use.
 - Access usually is controlled by a username and password.
- Disadvantages of cloud storage:
 - You must be connected to the Internet to access your data.
 - You trust someone else to protect your data from unauthorized access.

The Safe Cloud Choice

- One of the safest forms of cloud storage is a *remote data backup service*, such as *Mozy* or *Carbonite*.
- Here is how a remote backup service generally works:
 - When you first sign up for the service, it copies the entire contents of your hard drive(s) to a cloud storage facility. (This process could take days.)
 - Whenever your computer is idle (that is, when it is powered on, but you are not using it), a program on your computer checks to see if any files have been added or modified; if so, they are copied to the cloud.
- Remote access to your data is controlled by a username and password given to you.
- Your data is *encrypted* as it is stored, so that even if someone breaks into the cloud facility, they could not read your data.
- Remote backup companies charge a monthly fee for remote storage of your data.

Data Mining

- *Data mining* is the process of extracting previously unknown, valid, and actionable info from large databases for use in business decision support or scientific computing. [Cabena 98]
- In English: Data mining searches large databases to discover useful info and patterns that could be useful in targeted marketing, etc.
- This data could be as simple as your home city, or as involved as your interests, purchasing habits, or browsing patterns.
- How does this relate to the topic of storing your data in the cloud?
- Answer: Sometimes, companies that store your data in the cloud include in their EULA (End-User License Agreement) the right to mine that data.
- Examples of cloud services that regularly mine user data are *Yahoo! Mail* and *Facebook*.
- Why do companies data mine?
 - They want to target you with marketing that is tailored to your interests and buying patterns.
- How can they get away with it, legally?
 - You agreed to the EULA terms when you signed up for the service.
- Is this really fair?
 - You've heard it said: There is no free lunch!
 - You are trading some of your privacy for free storage.

- What behaviors make me vulnerable to data mining?
 - Use of free email accounts.
 - Use of social websites, such as Facebook.
 - Sending email to others who use free email accounts.
 - Registration at any website.
 - Registration of products online.
 - Entering contests or drawings online.

- How can I prevent mining of my data:
 - Disconnect your computer from the Internet.

- How can I minimize data mining:
 - Avoid providing personal information in any Internet communications.
 - Use only “commercial” email accounts.

- How can I live with data mining:
 - Use spam filters on your email accounts.
 - Install Web/email client filtering plugins. (For example, *Incognito* for the Safari browser.)
 - Use a *proxy server* when you are browsing the Web. (For example, <http://untraceable.us>.)