

Slide 1

### Administrivia

- Grades on homeworks so far and attendance mailed earlier today. If I seem to have gotten something wrong, please tell me ASAP. Several people appear not to have turned in individual reports. Turn them in ASAP to recover those points.

(Questions about Homework 1 grades/problems? Also see sample solution, just posted.)

- Homework 4 proposals due by 5pm today. Homework itself due next *Tuesday* (extended one day).

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### Interoperability with Windows — File and Printer Sharing

- How to share files, etc., between Windows and Unix? Best choice involves CIFS (Common Internet File System), formerly known as SMB.
- To make Unix directories, etc., available to Windows — Samba. Provides file sharing, network printing, authentication, name resolution, file/printer “browsing”. No changes needed on Windows side. On Unix side, configure via `/etc/samba/smb.conf`.

### Interoperability with Windows — Remote Access to Unix

- Text-mode access:

Windows provides a `telnet` client — but not very secure or featureful.

Better to use SSH-capable terminal emulator. Book mentions several; we like (free) `putty`.

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### Interoperability with Windows — Remote Access to Unix

- Graphics-capable access:

Graphical stuff on Unix provided by X Window System. Client/server model, with “server” that graphical capabilities, “clients” (e.g., `mozilla`) that use them.

To make this work from Windows, need an X server that runs under Windows, a.k.a. “X emulator”. Book mentions some choices; free `cygwin` now includes this functionality and is often recommended.

Recall/notice that Linux allows running multiple X servers in “virtual consoles”:

```
X :1 -query othermachine -once
```

and switch back and forth with control-alt-F7 / control-alt-F8.

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### Interoperability with Windows — More Stuff

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- `cygwin` — Unix-like environment under Windows.
- VMware — run Windows “under” Unix.
- Wine (latest version renamed Cedega) — run (some) Windows programs under Unix.
- Dual boot systems.
- OpenOffice and other programs (`abiword`, `antiword`, `catdoc`, etc.) to read Microsoft Office file formats under Unix.

### Anonymous FTP

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- Another potentially useful service — anonymous FTP. Chapter 22 describes how to set up — but be advised that not all steps may be needed. On `Sol`, it appears that the main setup is putting files to be served in `/var/ftp`.

### A Little About Printing

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- Executive-level summary: Configuring and using printers is moderately system-dependent. RedHat and FC use CUPS, best configured with point-and-click tool.
- Some interesting/useful commands (Linux): `lpr`, `lpq`, `lpc`, `lprm`.
- Some interesting (non-administrative) commands: `enscript`.

### A Little About Daemons

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- In CSCI 4320 we talk about the “process abstraction” — nice way of thinking about multiple “in effect at the same time” activities.  
Along these lines, background/system activities in Unix often implemented as “daemons” (background processes).
- Chapter 28 lists many — read to find out about (some of) what you get when you do `ps --user root`.

### Course Review — What We Learned

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- If you've kept up with reading, then you probably know more than you did about a variety of topics, including:
  - Root versus regular users.
  - Files, filesystems, permissions.
  - Adding and deleting users and groups.
  - Kernels and the boot process.
  - Installing software.
  - Networking and network-related services (DNS, NFS, e-mail, Web serving).
- If you did the first three homeworks, then you got some experience installing and configuring Linux.

### Minute Essay

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- What did you like or find valuable about this course?
- Do you have suggestions about how the course could be better if taught again?