Basic UNIX 3:  
Linux for Windows Users

Where we're going:  
• Windows vs. Linux: differences vs. similarities  
• Getting Started  
• Working at the Desktop(s)  
• Managing Files  
• Finding Applications  
• Getting Help
Differences between Windows and Linux

- Choice of GUI vs. Command Line
- Monolithic vs. Modular Design
- Administrator/User Dichotomy
- GUI vs. Command Line Administration
Choice of GUI vs. Command Line

- Windows has only one user interface
- Linux has lots of choices
  - X Windows (graphical user interfaces) with a variety of window managers
  - Text console (good for remote access, small machines, servers without monitors)
Monolithic vs. Modular Design

- Windows: "everything" is incorporated into the kernel (Explorer, Internet Explorer, Windows Media Player, etc.)

- Linux: more modular; desktop manager, Web browser, media players run on top of the Kernel and cannot take down the system if they crash (well, at least not as easily) and can be customized by the user
Administrator/User Dichotomy

• Ordinary users do not have power to install software or change system settings

• Administrators can install software, change system settings, kill processes, read/write files in any directory

• This ability is actually in Windows 2000/XP, but seldom used (especially in home systems) because of legacy Windows compatibility
GUI vs. Command Line Administration

- Windows administration almost always done from a GUI (Control Panel, Administrative Tools or Microsoft Management Console)

- Linux administration usually done from a command line
  - Easily done remotely (Linux servers don't need monitors, keyboards)
  - Easily scriptable and automated
Logging In

• Usernames and passwords
  - Assigned by the system administrator, or (on Iowa State Linux boxes) your ISU NetID and password

• Choose your window manager

• Choose your language
Logging In

• Usernames and passwords

• Choose your window manager
  - Default RHEL installation includes GNOME, KDE and FailSafe (a very minimal WM)

• Choose your language
Logging In

• Usernames and passwords
• Choose your window manager
• Choose your language
  - Linux can be installed to include support for many languages
Gnome Desktop

• Desktop icons open in Nautilus
  - Computer (all drives)
  - username's Home (/home/username)
  - Trash

• Top Edge Panel (functions of Start Menu and System Tray)

• Bottom Edge Panel (select windows and virtual desktops)
Top Edge Panel

- Applications Menu ( = Windows All Programs)
Top Edge Panel

- Applications Menu ( = Windows All Programs)
- Places Menu (drives, network, connect to servers, search)
Top Edge Panel

- Applications Menu (= Windows All Programs)
- Places Menu (drives, network, connect to servers, search)
- System Menu (preferences, admin tools, log out and shutdown)
Top Edge Panel

- Applications Menu (= Windows All Programs)
- Places Menu (drives, network, connect to servers, search)
- System Menu (preferences, admin tools, log out and shutdown)
- Application Launchers
Top Edge Panel

- Applets
Bottom Edge Panel

- Clear Desktop button
Bottom Edge Panel

- Clear Desktop button
- Buttons for open windows
Bottom Edge Panel (right)

- Virtual Workspace selector
Bottom Edge Panel (right)

- Virtual Workspace selector
- Trash Can
K Desktop Environment (KDE)

- Icons open in Konqueror
  - Active removable drives show icons
  - Trash Bin
- KDE Panel ( = Windows Taskbar)
KDE Panel

- K Menu ( = Windows Start Menu)
KDE Panel

- K Menu (= Windows Start Menu)
- Application Buttons
KDE Panel

- K Menu ( = Windows Start Menu)
- Application Buttons
- Pager (switches virtual workspaces)
KDE Panel

• K Menu ( = Windows Start Menu)
• Application Buttons
• Desktop Switcher
• Buttons for open windows
KDE Panel

- K Menu ( = Windows Start Menu)
- Application Buttons
- Desktop Switcher
- Buttons for open windows
- Applets
Switching Between Windows

- Varies; most modern WM accept the Windows <Alt/Tab>, clicking on the window or clicking on the appropriate button in the Panel
- Clicking on the button of an open window will minimize it and bring another to the top
- Some window managers (like Blackbox and TWM) insist that you click on the window titlebar or use arrows on the manager bar
Manipulating windows

- Moving and resizing windows much like MS Windows except for:
  - A window can be forced to “Keep Above Others” or “Keep Below Others” or go fullscreen (under “Advanced”)
  - Borders can be removed
  - Commands for moving window to other workspaces (Move to Workspace Right & Move to Another Workspace in Gnome, Desktop 1-4 in KDE)
Virtual Workspaces

- Separate semi-independent workspaces on the same machine
- <Alt/Tab> switches between windows on the same workspace
- Click on the Pager or press <Ctrl/Tab> to change workspaces
- To move a window to another workspace, click upper-left-hand button and choose a workspace
Closing windows

• To close a window:
  - Choose File -> Exit in the application
  - Click the close box (upper right-hand corner)
  - Press <Alt/F4>
  - In a terminal window, press <Ctrl/D>
Mouse actions

• Most window managers use all three buttons!

• Copy/paste -- may be different from Windows and may vary from DM to DM
  - Highlighting is copying
  - Middle-click is paste (left-and-right click, if you only have two buttons, or wheel-click will work with wheel mice)

• Most applications and window managers provide right-click contextual menus as well.
File Managers

• The default file manager will vary with Desktop Manager
  - KDE -> Konqueror
  - Gnome -> Nautilus
  - Others...

• As always, you have a choice; you can run Nautilus under KDE, etc.

• Nautilus has problems with OpenAFS; use Konqueror for AFS volumes instead.
File Managers

• And there's always the shell...
  - Console commands always work in a terminal window, even if you're in an unfamiliar window manager
  - Look for Konsole, Gnome Terminal, xterm, or rxvt
Using Konqueror

- To start, choose KDE Menu > Home
- Initially starts in user's home directory; use Up button if you want to see upper-level directories
- Use Up and Back buttons to navigate
- Double-click to open, right-click on files for action menu
More on Konqueror

• Drag-and-drop between windows works, or use copy-and-paste

• Web and ftp servers can be opened as well (use URL)

• Several views are available in the View menu

• Location -> New Tab allows you to open more than one directory in the same window
Removable Disks

- Disks must be unmounted before you remove them.

- Under Gnome, CDs, DVDs and USB drives will automatically mount and create a desktop icon when they're inserted; right-click and select "Eject" to unmount.

- Under KDE, the CD icon appears on the desktop; right-click and select "Eject" to unmount.

- Floppies or Zip disks must be mounted by double-clicking in Computer (Gnome) or under Devices in Konqueror before using them; right-click and select "Unmount volume" before you remove them.
More on Removable Disks

- Removable disks appear in the directory tree under the /media directory.

  Floppy = /media/floppy  
  CDROM/DVD = /media/CDROM  
  CD-RW = /media/cdrecorder

- Before removing the disk, right-click on the disk and choose “Unmount” or (as root) enter the command `eject /media/device`
Nautilus

• Default file manager in Gnome Desktop, or invoke from command line with `nautilus &`

• Double-clicking a folder or drive opens a new window

• Choose "Computer" from Places menu to see drives

• Drag-and-drop moves files by default (except when leaving your machine); to choose, drag-and-drop with the middle button
More on Nautilus

• To delete a file, highlight and press {Delete}, or drag to Trash

• Places menu includes "CD/DVD Creator", which allows you to drag files to a window and burn them to a CD or DVD
Formatting a Floppy

1. Insert a disk
2. Choose System Tools -> Floppy Formatter (Gnome only) or run the command gfloppy
3. Enter a volume label
4. Click Format.

You'll still need to mount the floppy after formatting it.
File Associations -- Nautilus

• Nautilus can identify files by extension, by MIME type, or by analysis

• Where possible, Nautilus will display thumbnails of the file

• To change default application:
  − Right-click on a sample file
  − Choose Properties -> Open With
  − Select the application to open the file
File Associations -- Konqueror

• Konqueror can identify files by extension, by MIME type, or by analysis

• Where possible, Konqueror will display thumbnails of the file

• In Konqueror, choose Settings > Configure Konqueror > File Associations

• Enter a pattern or select a filetype, then choose the application to open it with and move it to the top of the list
Configure file associations

Find filename pattern:
* .jpg

Known Types
- image
- jpeg

Filename Patterns
* .jpg
* .JPG
* .jpeg

Description
JPEG Image

Application Preference Order
KView
KlconEdit
The GIMP
Image Viewer
gThumb Image Viewer
KolourPaint

Add...
Move Up
Move Down
Edit...
Remove

OK
Apply
Cancel
Living with Linux in a Windows World

- Accessing Windows shares
- Equivalent and/or compatible applications
- WINE (run some Windows applications)
- Crossover Office (run Microsoft Office)
Accessing Windows Shares

- Works in either Nautilus or Konqueror
- Enter an URL in the form:
  smb://username@servername/sharename/path
- Nautilus also has the File -> Connect to Server command, which puts an icon on the Desktop as well. (You should unmount these when you're finished.)
Equivalent/compatible applications

- Microsoft Office
  - OpenOffice.org / StarOffice
  - Abiword / Gnumeric
- Microsoft Outlook
  - Evolution
- Photoshop
  - Gimp

http://www.linux.ie/newusers/alternatives.php
WINE (WINE Is Not an Emulator)

- WINE allows you to run some Windows software under Linux by translating Windows API calls to equivalent Linux/X library calls.
- WINE doesn't run all Windows software, but the list is growing rapidly.
- Install apps with `wine setupcommand`, run with `wine appfilename`.
- http://www.winehq.org
Where are Wine's files?

- Each user gets a private “machine” located at 
  /home/username/.wine
- The Windows hard disk is under “c_drive”
- *.reg files are the Windows Registry
- The actual UNIX filesystem is under
  “dosdevices/z:”
Wine Demo

- Type the following commands:

  cd winstuff
  wine calc.exe

  curl -O http://tech.ait.iastate.edu/linux/linuxed/exercises/Opera_9.10_Classic_Setup.exe

  wine Opera_9.10_Classic_Setup.exe
Wine a security risk?

• Users can install a wide variety of Windows applications, including potential security risks, *without a root password!*

• Good news: apps run with the user's privileges, they still can't modify system files other than their own
Crossover Linux

- Crossover Linux is an enhanced (commercial) version of WINE specifically designed to run Microsoft Office, including Internet Explorer and Access, and other applications.

- A server edition allows thin client machines to run Windows apps without having software installed locally (and without CALs)

- http://www.codeweavers.com
Locating software

Databases of free and commercial applications

- http://sourceforge.net/softwaremap/trove_list.php
- http://freshmeat.net
- http://linux.about.com/od/soft
- http://www.ibiblio.org/pub/Linux/
Getting Help

- Help system
  - Gnome: System -> Help
  - KDE: KDE Menu -> Help
- Man pages
  man commandname or browse in Help
- Red Hat Linux manuals
  http://www.redhat.com/docs/
- Linux Newbie Help Files
  http://www.tuxfiles.org/
- Linux Documentation Project
  http://www.tldp.org