

What is Linux?

- an operating system
- Unix-like
- Open source
- created in 1992 by Linus Torvolds
- · can be installed on a wide variety of hardware
 - mobile phones
 - desktop/laptop computers (PCs)
 - mainframes
 - supercomputers

Using Linux

- Common user interfaces:
 - * Command line (\$ prompt)
 - User enters commands at the prompt
 - · results displayed on following lines
 - * X Window System graphical interface
 - Similar to MS Windows or Mac OS X
 - KDE: K Desktop Environment

Accessing Linux at Texas State

- Derr 231: Texas State CS Dept Linux Lab
- Requires a CS Dept Linux account
 - * use your netID and password
 - * http://cs.txstate.edu/labs/LinuxAccounts.php
- The lab machines start up in KDE (windows).
- To open a terminal window :
 - * Click on the kaleidescope, select: System Tools > Terminal

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Linux File System

- Common hierarchical system.
- Root directory of the system: /
- Directories can contain:
 - * Files
 - * Other Directories
- Each user has a home directory:
 - * /home/Students/js108

Basic Shell Commands

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• To display the current (working) directory

[...]\$pwd /home/Students/js108

To display a listing of the contents of the current directory

[...]\$**ls**

- To see more info about the files in the directory
 - [...]\$**ls** -1

Basic Shell Commands

- To display the manual page for a linux command [...]\$man <command-name>
- To display a list of options that work with the command:

[...]\$<command-name> --help

• To clear the screen

[...]\$clear

Basic Shell Commands

- To display all the files, including the hidden ones
 [...]\$1s -a
- To display a listing of the contents of some other directory

[...]\$**ls** /etc

• To change the current directory

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[...]$cd /etc
```



Basic File Editing

- When finished, press CTRL-X
- Follow the prompt: press Y to save
- You may also use other editors:

* vim

* emacs

All of these editors run from within the terminal window.

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Basic File Editing

• To use the nano editor to create a file and start editing it:

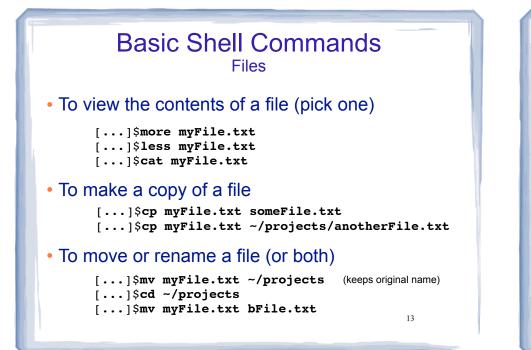
[...]\$nano myFile.txt

- This begins an editor within the terminal window.
- You can type to enter text, navigate with the arrow keys, use the backspace/delete keys.
- Other commands, listed at bottom of window, are activated with the control key and a letter.

More Editing Options

- There is also a text editor in KDE (the graphical interface)
- Find it in the menu system
- Files you create and save in the KDE text editor are stored to your linux home directory and can be accessed using the shell commands.
- Note: there is also a Firefox browser on the X Windows system.

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Compiling and Running C++ Programs

• Create a file containing a C++ program.

[...]\$nano hello.cpp

• To compile the file using the gnu compiler:

[...]\$g++ hello.cpp

(if you get compiler errors, fix in editor, run g++ again)

• To run the executable file:

[...]\$./a.out (Not allowed to directly execute a file in the current directory)

Basic Shell Commands Files

- To delete (remove) a file
 - [...]\$rm myFile.txt
 [...]\$rm *.txt
- The file is gone, there is no trash can.

Remote Access

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• Secure Shell allows you to securely connect to a remote computer within a command shell.

[...]\$ssh js108@hercules.cs.txstate.edu

(You will be asked to enter your password)

- Current directory will be your home directory
- Can use all the standard linux commands
- Type exit to logout of the secure shell session
 [...]\$exit

Secure File Transfer from unix/linux shell

 Secure FTP allows you to securely connect to a remote computer to transfer files.

[...]\$sftp js108@hercules.cs.txstate.edu

(You will be asked to enter your password)

- 1s will display files on remote machine
- use get to transfer a file to your local machine sftp>get myFile.txt
- Type exit to logout of the secure ftp session sftp>exit

Secure Shell on a Windows PC

 You can download the Secure Shell client (or puTTy) from the CS departmental download server

http://downloads.cs.txstate.edu

- Select os then windows then remote_access, then SSHSecureShellClient-3.2.9.exe (then install it).
- To run: double click on Secure Shell Client icon
- Click Quick Connect and enter a host machine:

hercules.cs.txstate.eduEnter username and password.

athena zeus eros hercules

Secure FTP on a Windows PC

- If you are currently connected remotely thru the Secure Shell client and would like to transfer files with Secure FTP:
- click the Windows menu,
- then New File Transfer
- Note: you can also use Filezilla, a free app for windows or mac.

http://filezilla-project.org

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