Information Infrastructure II

INFO I211 – Spring 2014 – Sections 18530 & 22519

Lecture 3 – 2014.01.22-2014.01.23

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Basic UNIX Topic Summary

Files and Directories

- Navigating the system

Create, copy, move, delete, display

Redirection

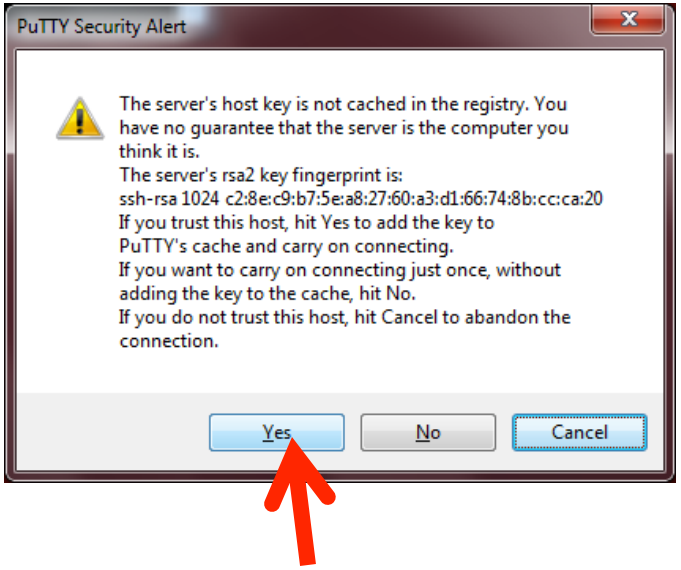
Wildcards

Changing permissions / executing files

PuTTY

STC machines have PuTTY installed:

use PuTTY during I211 labs!



Basic UNIX

SoIC UNIX Servers:

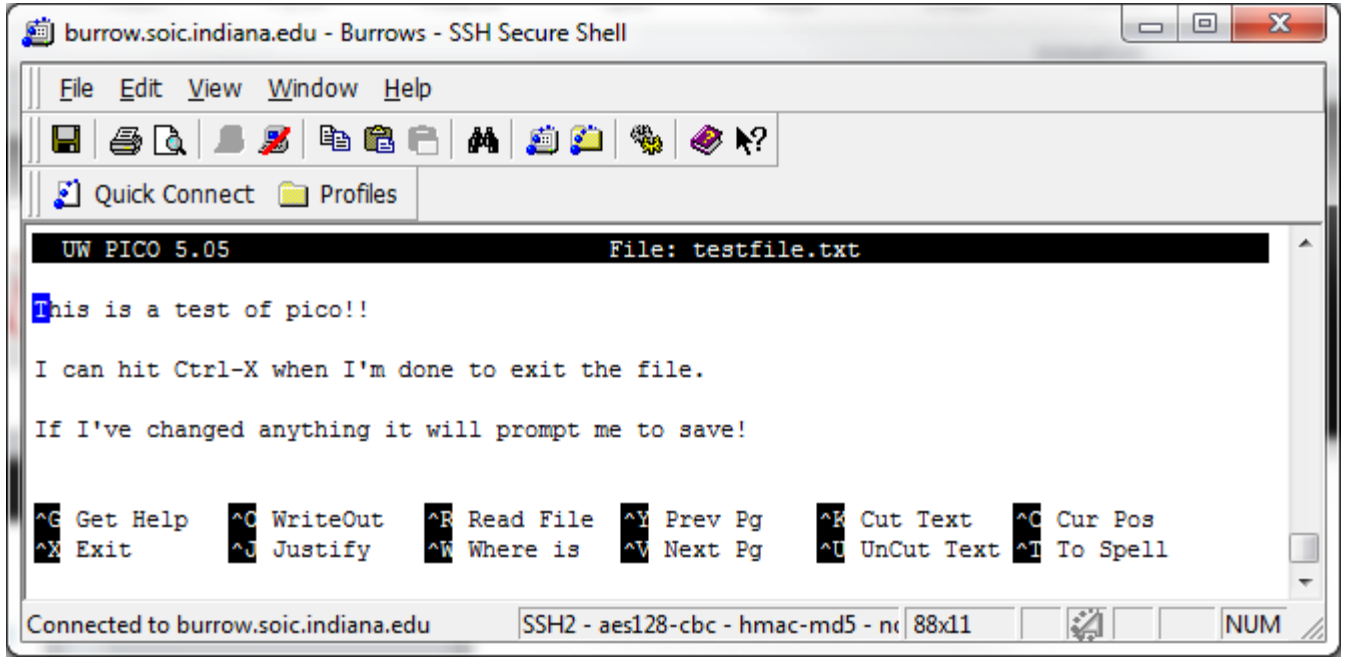
- burrow.soic.indiana.edu
  - also provides disk space for Web and DataBase servers
- Unix Basics: http://kb.iu.edu/data/apek.html
- Unix Commands: http://kb.iu.edu/data/afsk.html

Editors

- Pico – easiest! Type **pico [filename]**
- (x)Emacs or Vi/Vim – much more powerful, quite a bit harder to learn.

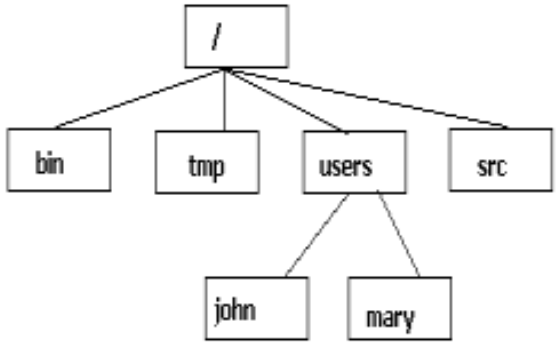
Basic UNIX

Pico:



Basic UNIX

The filesystem is a tree



By default, you log in to your home directory

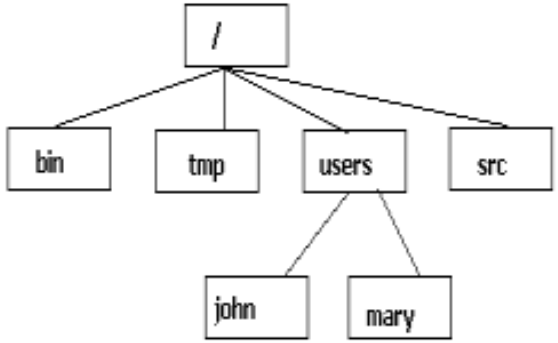
Type **pwd** to see the full path to your current directory

cd [directory] allows you to move into another directory

ls allows you to view files and directories

Basic UNIX

Moving up and down



If we're in **/users/mary** and
we want to go to **/bin**, we need t
two directories and then up one

cd .. Takes us down a directory

cd ../.. Takes us down two directories

cd ~ takes us to our home directory!

cd / will take you down to the root directory of the machine!

Basic UNIX

ls lists all files in the current directory

ls –a lists all files AND all hidden (system) files

ls –l lists all files with details:

- File permissions
- Size
- Date modified

You can put stuff after ls to make it more specific:

ls –l [filename]

Basic UNIX

mkdir [name] creates a directory with that name
rm [name] removes that file
rm –r [name] removes a directory and all its files

cp [fileold] [filenew] copies a file
mv [fileold] [filenew] renames (moves) a file
cat [name] prints out the contents of a file
Use **more [name]** for long files. Press SPACE.

Basic UNIX

Redirection

If you add **> [filename]** to one of these commands, it saves the output into a file instead of displaying it

If you add **>> [filename]**, the output will be appended to the end of the file

Example:

```
ls –a > dir.txt
more dir.txt
rm dir.txt
```

Basic UNIX

The Burrow cluster is a collection of machines. You may not always be on the same one. To connect always to the main burrow server, connect to **`silo.soic.indiana.edu`**.

Use the **who** command to see who else is logged into that machine, and the **w** command to see a bit about what they're doing

If a user on the physical machine reboots it, you may lose your connection! Save often!

Basic UNIX

Wildcards – Most UNIX commands support wildcards, which help you to not have to type an entire filename or query

* = match anything

Ex:

```
ls *.py
ls p*
```

Basic UNIX

Wildcards – Most UNIX commands support wildcards, which help you to not have to type an entire filename or query

? = match a single letter or digit

Ex:

```
ls pe?.py
ls numbers.p?
```

Basic UNIX

Autocompletion

If you start to type a filename, UNIX can complete it for you. Try hitting TAB after typing a bit of the filename

Basic UNIX

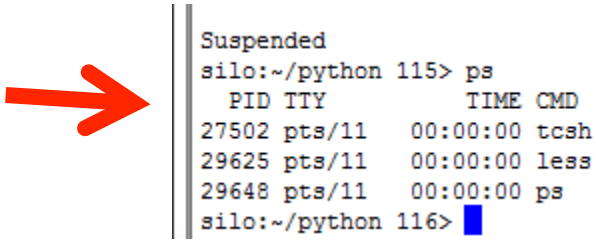
View running processes:

Type **ps** to see what you have running

Terminate or "kill" a process

If a process locked up, you may need to kill it

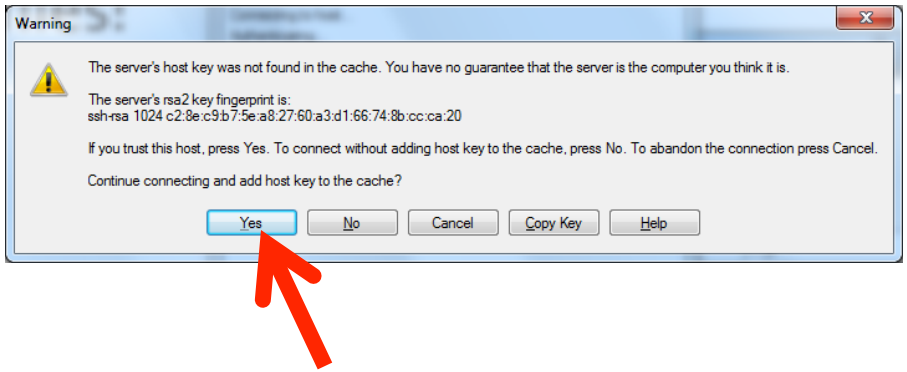
Type **kill -9 [processid]** to kill it



```
Suspended
silo:~/python 115> ps
  PID TTY          TIME CMD
27502 pts/11   00:00:00 tcsh
29625 pts/11   00:00:00 less
29648 pts/11   00:00:00 ps
silo:~/python 116>
```

WinSCP

On STC Machines, use WinSCP to transfer files



Basic UNIX

Running python files:

Make sure you're in the same directory as the python file and type

python [filename.py]

For now, don't try to run anything with a GUI on a Burrow cluster machine.

Basic UNIX

We can also make a python file **executable** on the system.

Put this in the first line of the file:

#! /usr/bin/env python

Then, type this in the directory where the file is:

chmod a+x [filename.py]

Now you can run it by typing:

./[filename.py]