Connecting to ICS Server, Shell, Vim CS238P – Operating Systems fall '18

BY

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Andromeda

- Server with Linux managed by the ICS.
- You must have an "@ics.uci.edu" account.
- Your server number is:

```
ser_num = (<ucinetid>%75)+1
```

The server you will connect is:

```
andromeda-<ser_num>.ics.uci.edu
```

How to connect to it

We need a **s**ecure **sh**ell client (ssh).

- In Linux: integrated.
- In Windows: integrated (win10), or Putty.
- In Mac-OS: integrated.

ssh username@andromeda-XX.ics.uci.edu

Welcome to Linux, now what?

A couple of notes:

- / is the root directory, everything is under it.
- ~/ is your home directory, it is an alias for /home/yourUsername/

https://en.wikipedia.org/wiki/Home_directory

Welcome to Linux, now what?

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- / is the root directory, everything is under it.
- ~/ is your home directory, it is an alias for /home/yourUsername/
- ./ is the current directory.
- . . / is the parent directory.
- Passwords are invisible.
- Case matters, "A" and "a" are different.

ls [options] [dir]

- List information about the FILEs (the current directory by default).
- - R: recursive.
- - l: long format, shows info of each file
- - a: show all files, including hidden files, those that start with a "."
- - h: file sizes in a nice way

cd [dir]

Change the shell working directory.

• If no directory is given, it changes to the home directory.

pwd

Print the name of the current working directory.

mkdir <dir name>

Create the directory <dir_name>, if it does not already exist.

touch -c <filename>

Creates a new empty file.

cp <source> <dest>

Copy the source file to the destination.

Example:

cp myFile.txt ./aDirectory/newFile.txt

mv <source> <dest>

Move or rename the source file to the destination file.

Example moving:

mv myFile.txt ./aDirectory/newFile.txt

Example renaming:

mv myFile.txt newName.txt

cat [filename]

Print the content of a file to standard output. If no file is given, then prints what comes from standard input (most of the cases the keyboard)

head <filename>

Print the first 10 lines of the filename to standard output.

• - n X: prints the first X lines

tail <op> <filename>

Print the last 10 lines of the filename to standard output.

• - n X: prints the last X lines

Copying things

scp <source> <destination>:<dir>

Copy files from one machine to another through ssh. Easier if you run it in your local machine

Example local to remote:

scp ~/localFile peter@andromeda-XX.ics.uci.edu:~/remoteFile

Example remote to local:

scp peter@andromeda-XX.ics.uci.edu:~/remoteFile ~/localFile

grep <pattern> [file]

Search for <pattern> in the given file.

- If no file is given, and you pass r as option, grep searches recursively in the working directory.
- Using -e <pattern>, grep interprets the pattern as an extended regular expression.

find -name <filename>
<dir>

Find a file named <filename> in the directory <dir>

There is a lot of other options.

Other useful tools

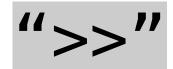
Redirect the standard output or input.

- Example: ls -l > myContent.txt
- Example: cat < myContent.txt</pre>

More on input redirection

https://askubuntu.com/questions/883786/how-does-input-redirection-work

Other useful tools



Append.

Example:

```
echo "Dear diary" > log.txt
echo "Today I..." >> log.txt
```

Other useful tools



Pipe, passes the output of a command to another as input.

Example:

```
ls -R | grep "myFile"
```

Some more commands

top

display Linux processes

htop

same as above but interactive

Some more commands

ps

display snapshot of current processes

Some more commands

kill <pid>

Kills a process



delete a file in the specified directory. If no directory is given, uses the current one.

- - r: recursive.
- - d: remove empty directories.
- - i: interactive, ask before each file.

DO NOT TRY THIS: rm - rd ./

Editors

vim

NORMAL MODE

- G go to end of file
- nG go to line number n
- v visual select
- Ctrl+O or I forward/backward
- y copy
- p paste
- u undo
- Ctrl+r redo
- dd cut line
- /<pattern> search pattern
- i go to insert mode
- : go to command mode

COMMAND MODE

- w write (save)
- wq save and quit
- q! quit without saving changes
- f show filename
- split horizontal split
- vsplit vertical split
- Ctrl+W <arrow> navigate windows
- copen quickfix tool
 - grep <pattern> *.<filetype> clear all splitting