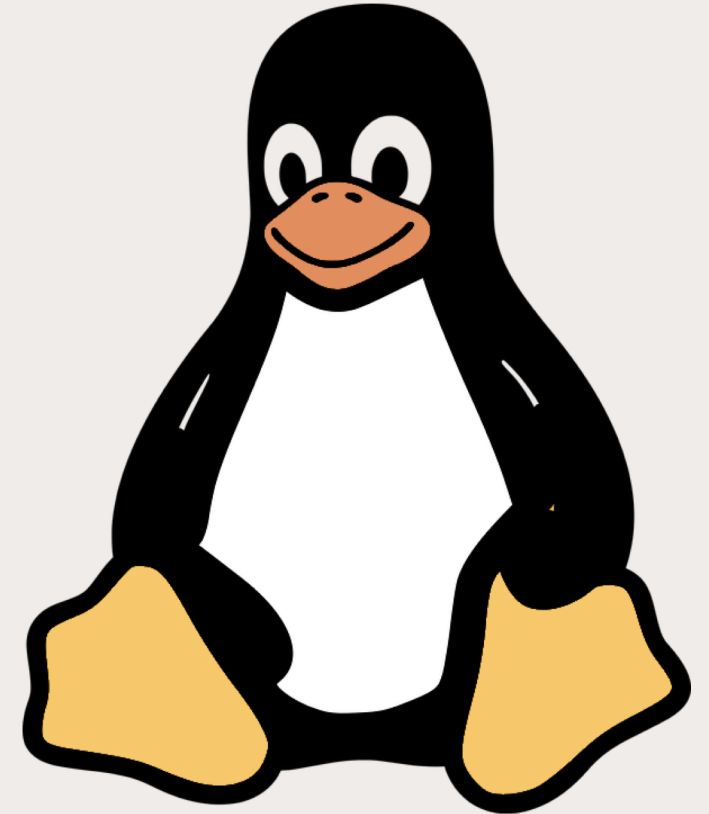


Using the Linux Servers

Code Camp Week 3

What are they?

- The Linux servers are a bunch of machines that are running the Linux operating system
- They have software that is useful and necessary for UCLA computer science courses
- Professors test student code using these servers
 - *Make sure to test your code before submitting*



Software Used

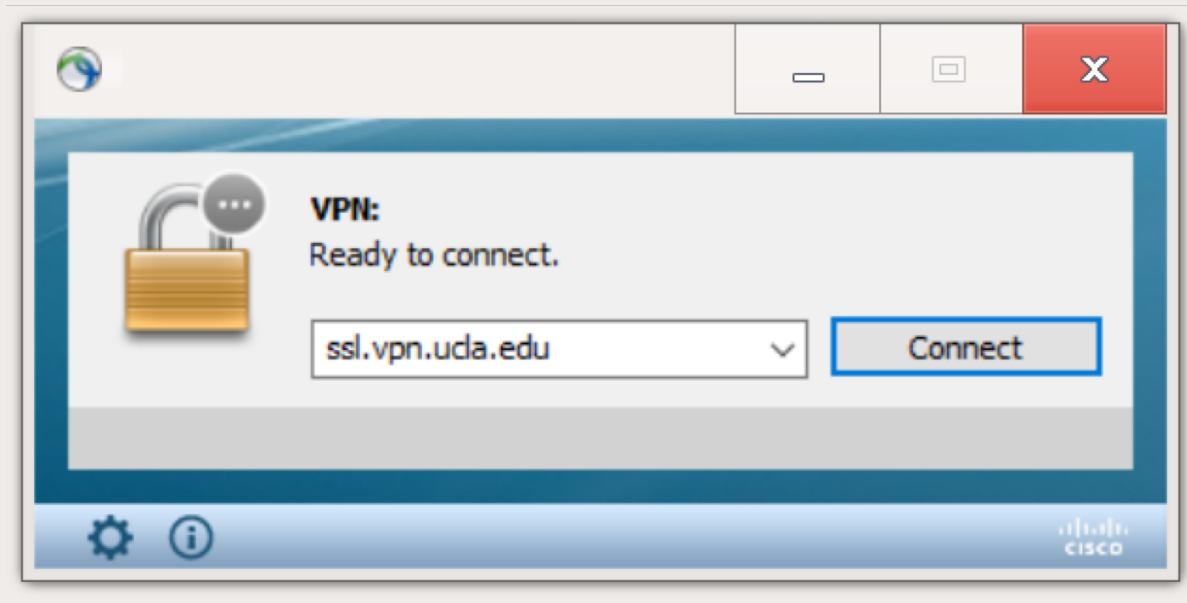
On Windows

- Cisco AnyConnect
 - Used to login to VPN
- Need to download Putty
 - Used to login to the server
- Optional download: WinSCP
 - Used to transfer files to/from the server

On Mac

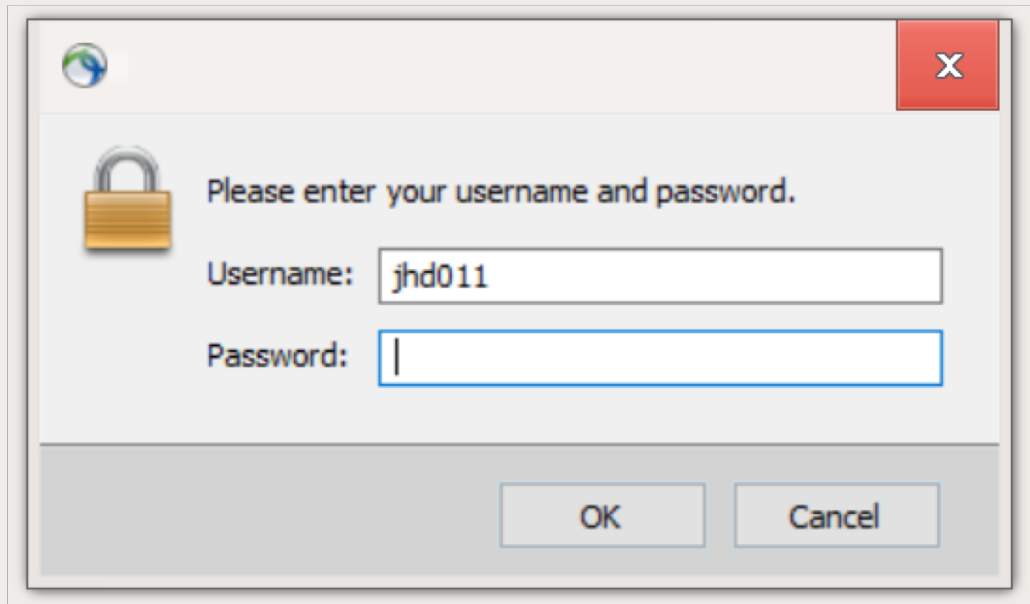
- Cisco AnyConnect
 - Used to login to VPN
- Use the Terminal app to login to the server

Connecting to the VPN



- Once installed, open the Cisco AnyConnect application
- The start screen should look like this
- Type 'ssl.vpn.ucla.edu' into the text box
- Press enter

Connecting to the VPN



- Sign-in using myUCLA credentials
- This is going to send a multi-factor authentication alert so approve that
- Once you sign-in you should be connected to the VPN

Signing In: Windows

Category:

- Session
 - Logging
- Terminal
 - Keyboard
 - Bell
 - Features
- Window
 - Appearance
 - Behaviour
 - Translation
 - Selection
 - Colours
- Connection
 - Data
 - Proxy
 - Telnet
 - Rlogin
 - SSH
 - Serial

Basic options for your PuTTY session

Specify the destination you want to connect to

Host Name (or IP address) Port

Connection type:
☐ Raw ☐ Telnet ☐ Rlogin ☒ SSH ☐ Serial

Load, save or delete a stored session

Saved Sessions

Default Settings
BeagleBone
Seafoam Pastel
Inxsrv07

Close window on exit:
☐ Always ☐ Never ☒ Only on clean exit

SEASnet username

jair@Inxsrv09.seas.ucla.edu

Name of the server

Signing In: Windows

```
Using username "jair".  
jair@lnxsrv09.seas.ucla.edu's password: █
```

- Type in your SEASnet password
- If no characters appear, don't worry, that is normal
- Hit enter when you are done

Signing In: Windows

```
Last login: Thu Sep 20 14:37:39 2018 from vpn-128-97-244-86.host.ucla.edu
*****
lnxsrv09.seas.ucla.edu RHEL 7
*****

RedHat 7 -- may not behave the same as other lnxsrv
Will be used by CS 35L, CS 33, CS 111, and CS 131

*****
*****
*
* SEASnet Computing Access
*
* Priority is given both on the servers and in the student labs to those
* students doing coursework. Computing support for research is provided by
* each department.
*****
* For assistance please contact help@seas.ucla.edu or call 206-6864.
*****
[jair@lnxsrv09 ~]$
```

If you see a page similar to this, you are done!

Signing In: MacOS

```
vpn-128-97-244-43:Code-Camp kromero$ ssh romero@lnxsrv09.seas.ucla.edu  
romero@lnxsrv09.seas.ucla.edu's password: [i]
```

SEASnet username

```
ssh romero@lnxsrv09.seas.ucla.edu
```

Command used to login

Name of the server

- Type in your SEASnet password
- If no characters appear, don't worry, that is normal
- Hit enter when you are done

Signing In: MacOS

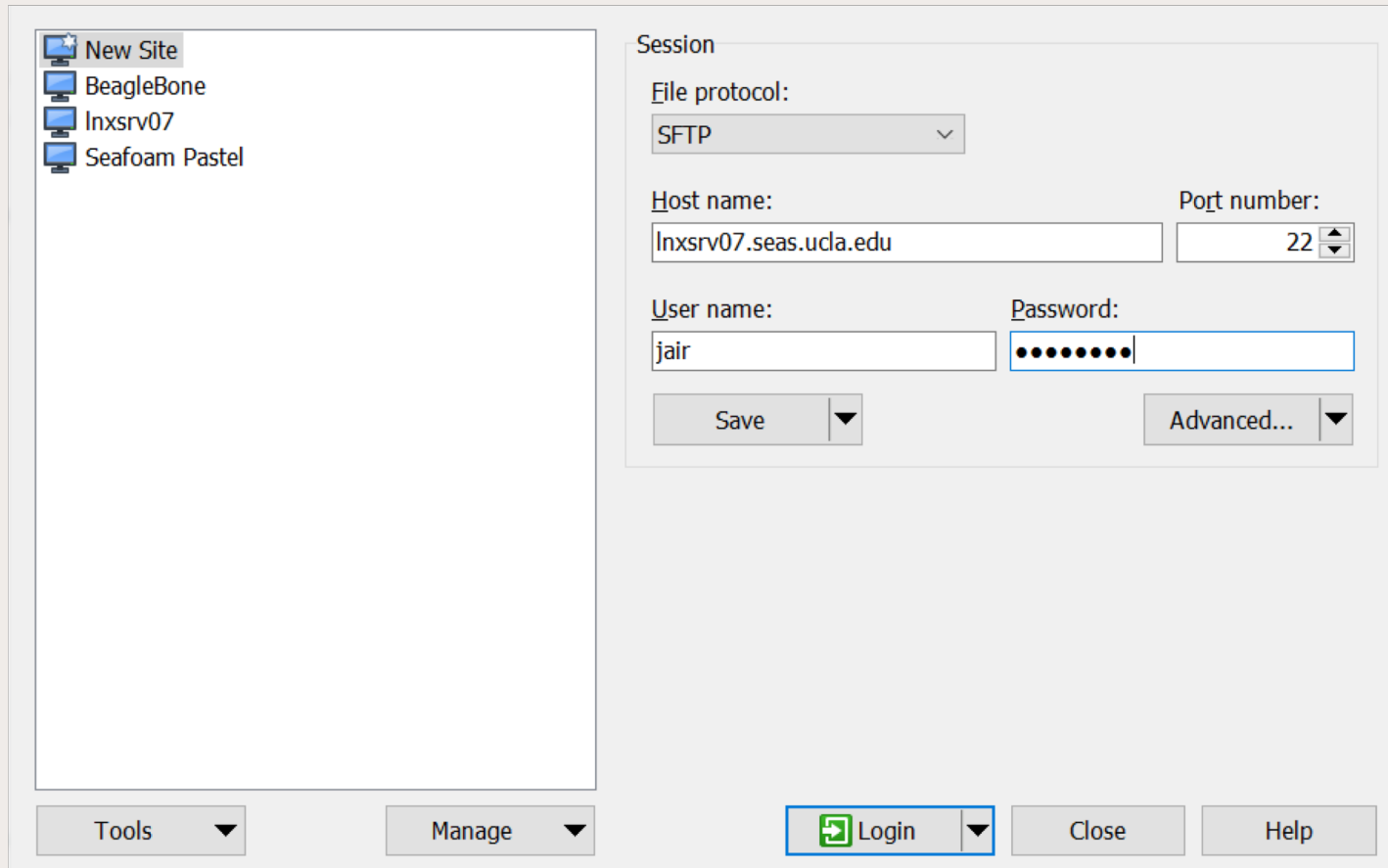
```
vpn-128-97-244-43:Code-Camp kromero$ ssh romero@lnxsrv09.seas.ucla.edu
romero@lnxsrv09.seas.ucla.edu's password:
Last login: Tue Mar 13 16:45:30 2018 from wifi-131-179-55-150.host.ucla.edu
*****
lnxsrv09.seas.ucla.edu RHEL 7
*****

RedHat 7 -- may not behave the same as other lnxsrv
Will be used by CS 35L, CS 33, CS 111, and CS 131

*****
*****
*
* SEASnet Computing Access
*
* Priority is given both on the servers and in the student labs to those
* students doing coursework. Computing support for research is provided by
* each department.
*****
* For assistance please contact help@seas.ucla.edu or call 206-6864.
*****
[romero@lnxsrv09 ~]$
```

If you see a page similar to this, you are done!

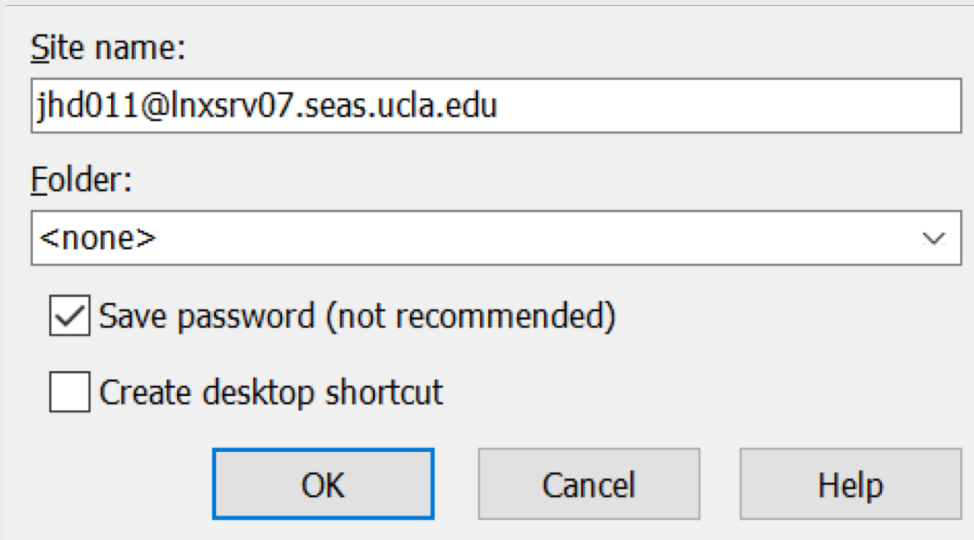
Getting Files on the Server: Windows



The screenshot shows a file transfer client window. On the left is a sidebar with a list of sites: 'New Site' (with a star icon), 'BeagleBone', 'Inxsr07', and 'Seafoam Pastel'. The main area is titled 'Session' and contains the following fields: 'File protocol:' with a dropdown menu set to 'SFTP'; 'Host name:' with a text box containing 'inxsr07.seas.ucla.edu'; 'Port number:' with a spinner box set to '22'; 'User name:' with a text box containing 'jair'; and 'Password:' with a text box filled with dots. Below these fields are 'Save' and 'Advanced...' buttons. At the bottom of the window are four buttons: 'Tools', 'Manage', 'Login' (highlighted with a blue border and a green arrow icon), 'Close', and 'Help'.

- **Host name** is the name of the server we used earlier
- User name and password are the SEASnet credentials

Getting Files on the Server: Windows

A screenshot of a Windows File Transfer dialog box. The dialog has a light gray background. At the top, it says "Site name:" followed by a text box containing "jhd011@lnxsr07.seas.ucla.edu". Below that, it says "Folder:" followed by a dropdown menu showing "<none>". There are two checkboxes: "Save password (not recommended)" which is checked, and "Create desktop shortcut" which is unchecked. At the bottom, there are three buttons: "OK", "Cancel", and "Help". The "OK" button is highlighted with a blue border.

Site name:
jhd011@lnxsr07.seas.ucla.edu

Folder:
<none>

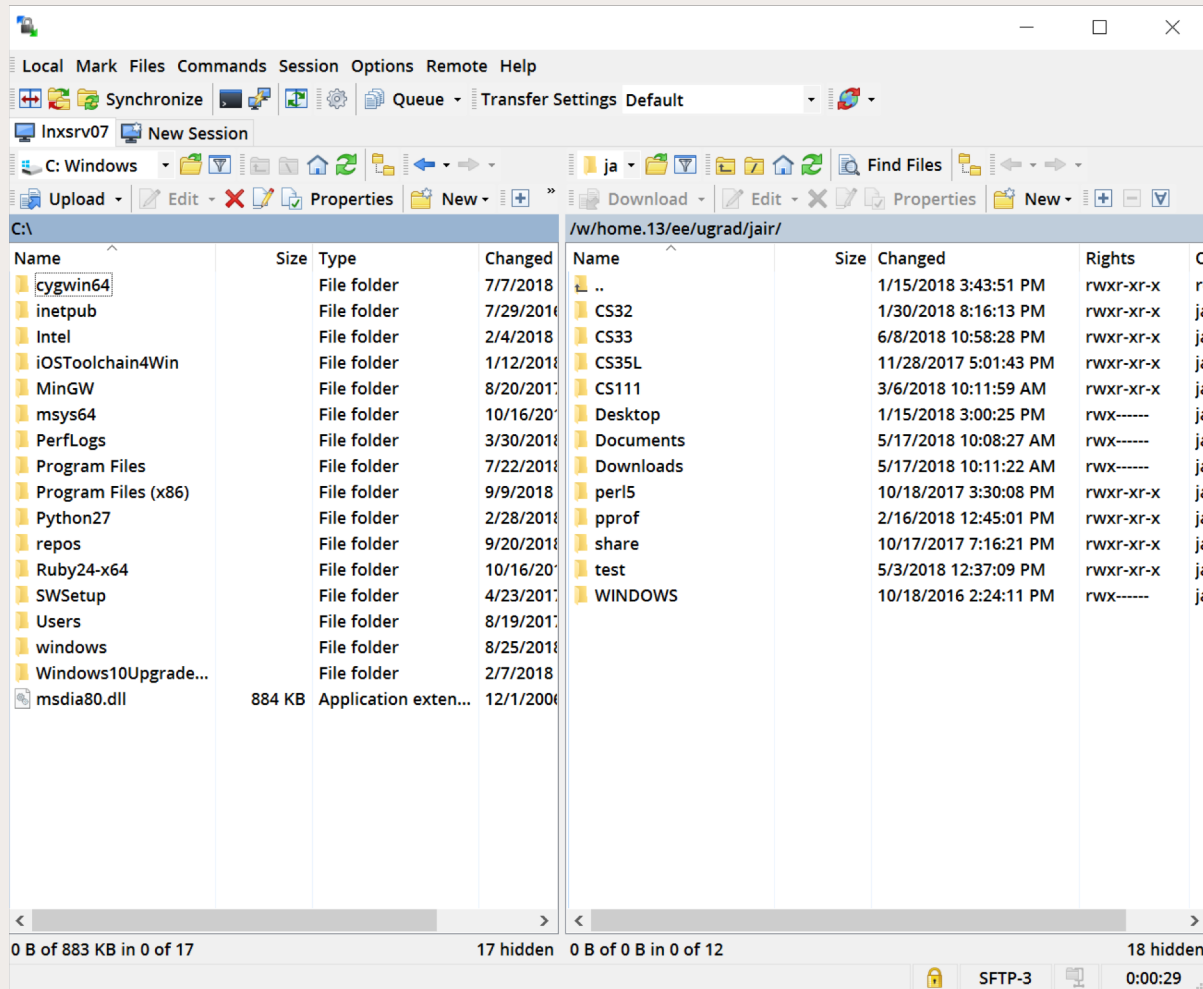
☒ Save password (not recommended)

☐ Create desktop shortcut

OK Cancel Help

- Before logging in, press save to avoid having to enter all the information next time
- Click save password

Getting Files on the Server: Windows



- The left is your local computer file system
- The right is the Linux server file system
- You could easily drag and drop across both

Getting Files on The Server: MacOS

File to copy Directory to copy into

```
jair@DESKTOP-JHD011:/mnt/c/Desktop$ scp hello.cpp jair@lnxsrv07.seas.ucla.edu:~/CS31
jair@lnxsrv07.seas.ucla.edu's password:
hello.cpp
```

SEASnet Hostname

100% 0 0.0KB/s 00:00

- SCP is the name of the command we will be using
- The file to copy is the first parameter
- The second parameter follows the format:
 - <hostname>:<dir>
 - <dir> most often starts with '~'
 - This indicated your account's home directory

Getting Files on The Server: MacOS

```
[jair@lnxsrv07 ~]$ cd cs31  
[jair@lnxsrv07 ~/cs31]$ ls  
hello.cpp  
[jair@lnxsrv07 ~/cs31]$
```

And now we have the file on the Linux server 😊

Using the System

- The servers run on a command line interface
 - The system provides a set of commands to navigate and use the system
 - The alternative is providing a graphical interface like Windows or MacOS
- Navigating the file system:
 - ls: Print the contents of the current directory
 - mkdir <dir>: Create a directory with the name “dir”
 - cd <dir>: Go into the directory with the name “dir”
 - emacs <file>: Modify or create a file with name “file”
 - This is a text editor used to write files
 - Has lots of integrated commands

Compiling and Running Code

- Run the following command while on the server

```
curl -s -L http://cs.ucla.edu/classes/fall18/cs31/Utilities/setupg31 | bash
```

- To compile code you use the following command
 - `g31 -o <name of executable> <name of cpp file>`
 - eg: `g31 -o test test.cpp`
- To run the executable and test your code you use
 - `./<name of executable>`
 - eg: `./test`

Software Links

- Cisco AnyConnect
 - Mac OS: <https://ftp.bol.ucla.edu/pub/bol/vpn/software/anyconnect-macos-4.6.00362.dmg>
 - Windows: <https://ftp.bol.ucla.edu/pub/bol/vpn/software/anyconnect-win-4.6.00362.msi>
- Putty:
<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>