



Lesson Module Checklist

- Slides
- WB
- Flash cards
- Page numbers
- 1st minute quiz
- Web Calendar summary
- Web book pages
- Commands
- Practice test uploaded
- Backup slides, CCC info, handouts on flash drive
- Check that backup room headset is charged
- Spare 9v battery for mic

Student checklist

- 1) Browse to the CIS 90 website Calendar page
 - <http://simms-teach.com>
 - Click CIS 90 link on left panel
 - Click Calendar link near top of content area
 - Locate today's lesson on the Calendar
- 2) Download the presentation slides for today's lesson for easier viewing
- 3) Click Enter virtual classroom to join CCC Confer session
- 4) Connect to Opus using Putty or ssh command

Introductions and Credits



Jim Griffin

- Created this Linux course
- Created Opus and the CIS VLab
- Jim's site: <http://cabrillo.edu/~jgriffin/>



Rich Simms

- HP Alumnus
- Started teaching this course in 2008 when Jim went on sabbatical
- Rich's site: <http://simms-teach.com>

And thanks to:

- John Govsky for many teaching best practices: e.g. the First Minute quizzes, the online forum, and the point grading system (<http://teacherjohn.com/>)



Instructor: **Rich Simms**

Dial-in: **888-450-4821**

Passcode: **761867**



Buzz



Carlos



Emily



Jon M.



Jon W.



Jordan



Joseph



JJ



Kiernan



Maria



Mathew



Mike C.



Michael F.



Mike M.



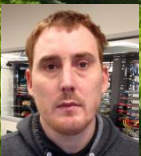
Nick L.



Rebecca



Ricardo



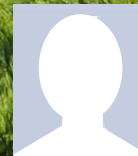
Robert



Steve



Tess



Tim



Troy

Quiz

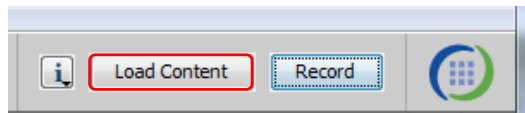
**No Quiz
Today !**



Whiteboard and Audio Setup

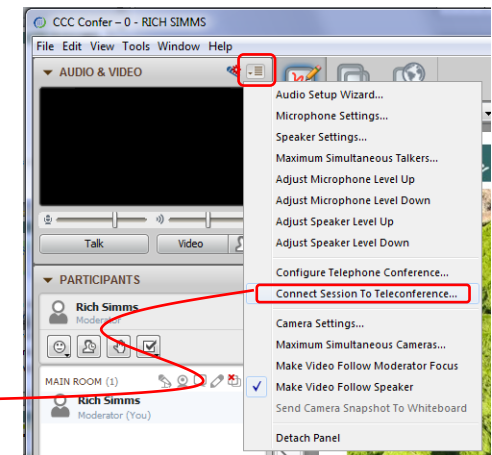
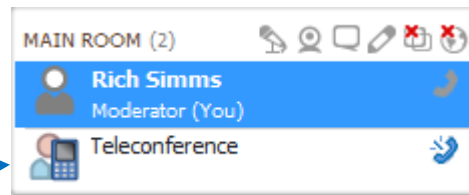


[] Preload White Board with cis*lesson??*-WB



[] Connect session to Teleconference

Session now connected to teleconference



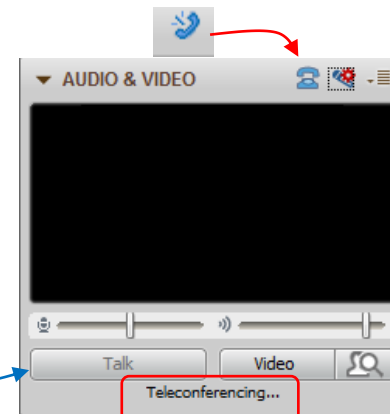
[] Is recording on?



Red dot means recording

[] Use teleconferencing, not mic

Should be greyed out



Keep wireless mic transmitter away from cell phone and podium if excess static occurs

Layout and share apps

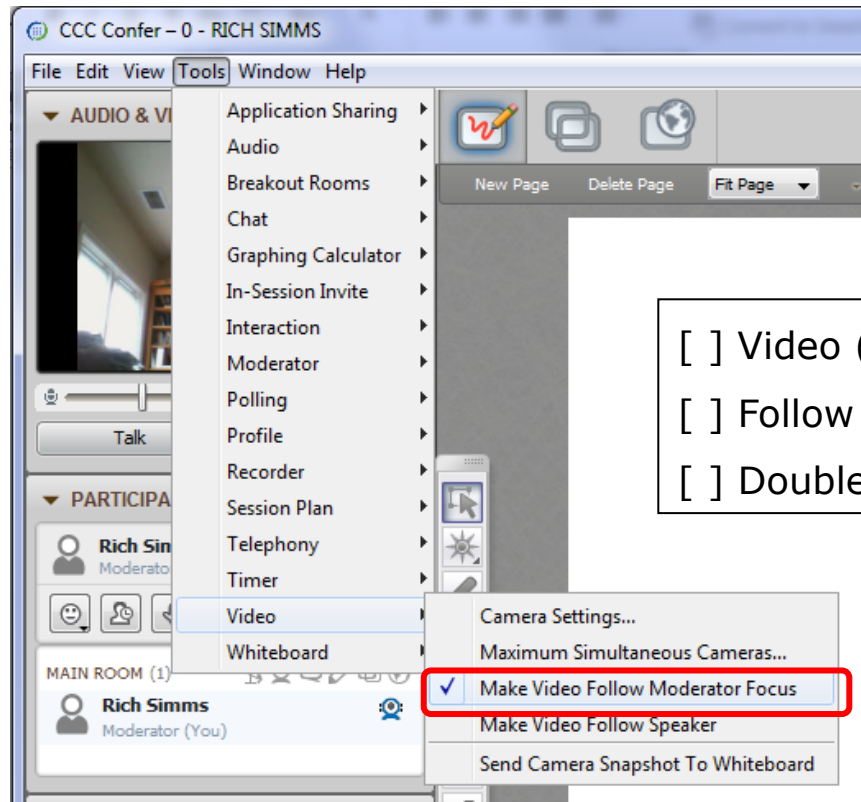


The screenshot shows a desktop with the following applications and layout:

- CCC Confer - 0 - RIC...:** A video conferencing application window on the left side of the desktop.
- foxit for slides:** A red box labeled "foxit for slides" with an arrow pointing to the "cis90lesson07.pdf" window in the center.
- chrome:** A red box labeled "chrome" with an arrow pointing to the "simms-teach.com/docs/cis90/cis-90-TEST-1-Fall-12.pdf" window on the right.
- putty:** A red box labeled "putty" with an arrow pointing to the terminal window in the center, which shows a login prompt and a command prompt.
- vSphere Client:** A red box labeled "vSphere Client" with an arrow pointing to the vSphere Client window in the bottom right corner.

The desktop also features a taskbar at the bottom with icons for various applications, including a web browser, file explorer, and office suite. The system clock in the bottom right corner shows the date as 10/10/2012 and the time as 6:52 AM.

Webcam for video



- ☐ Video (webcam) optional
- ☐ Follow moderator
- ☐ Double-click on postages stamps



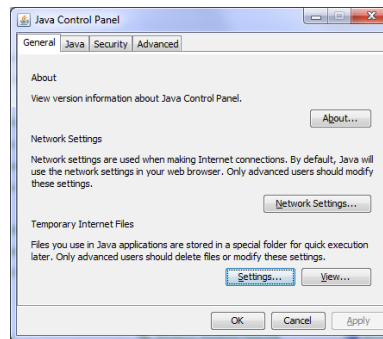
CCC Confer Troubleshooting



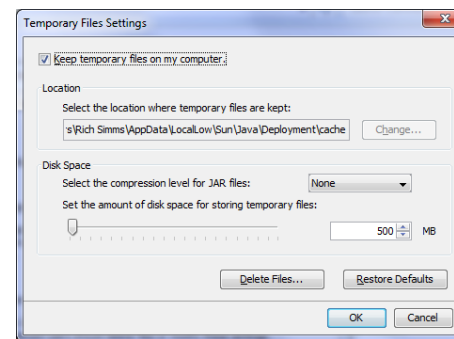
Control Panel (small icons)



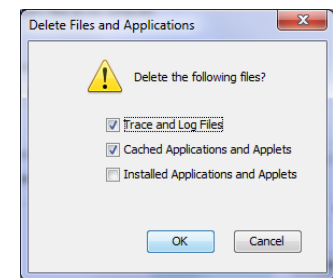
General Tab > Settings...



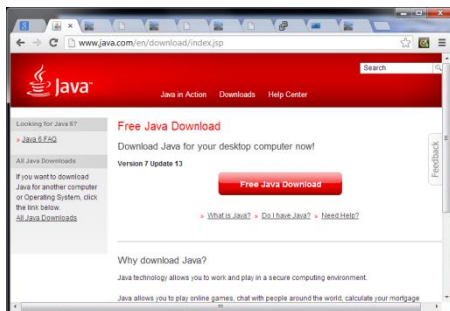
500MB cache size



Delete these



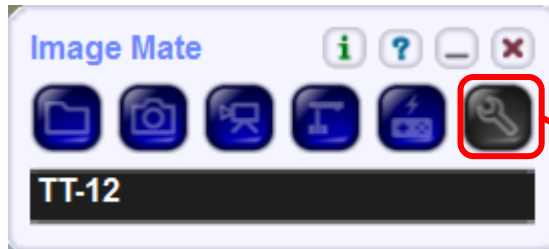
Google Java download



Universal Fix for CCC Confer:

- 1) Shrink (500 MB) and delete Java cache
- 2) Uninstall and reinstall latest Java runtime

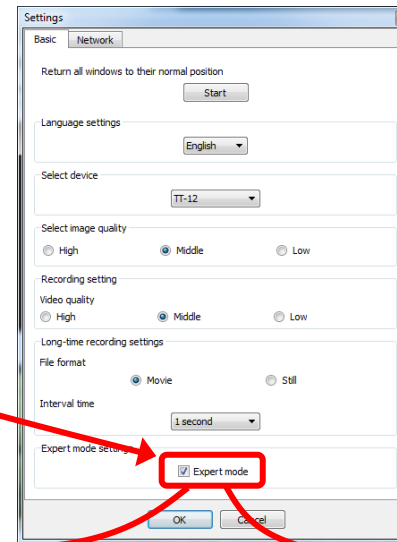
Using Elmo with CCC Confer



Elmo rotated down to view side table



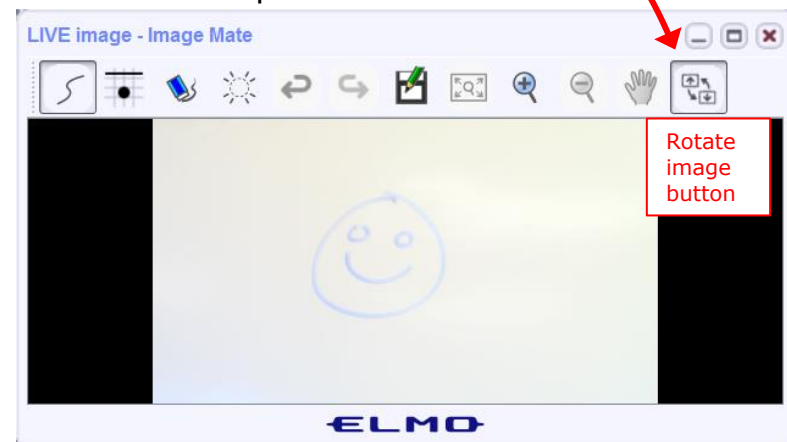
Run and share the Image Mate program just as you would any other app with CCC Confer



The "rotate image" button is necessary if you use both the side table and the white board.

Quite interesting that they consider you to be an "expert" in order to use this button!

Elmo rotated up to view white board



File Transfer and Review

Objectives	Agenda
• Transfer project files to Windows and Linux systems • Prepare for final exam	• No Quiz • Questions from last week • File transfer continued • Project Presentations • Practice Test #3



Questions



Questions?

Lesson material?

Labs? Tests?

How this course works?

- Graded work in home directories
- Answers in /home/cis90/answers

Who questions much, shall learn much, and retain much.

- Francis Bacon

If you don't ask, you don't get.

- Mahatma Gandhi

Chinese
Proverb

他問一個問題，五分鐘是個傻子，他不問一個問題仍然是一個傻瓜永遠。

He who asks a question is a fool for five minutes; he who does not ask a question remains a fool forever.



Housekeeping



**Project is due
tonight!**

Due 11:59 PM tonight:

- Final Project submittal

Due 11:59 PM next week:

- Five forum posts
- Extra credit labs

Grading rubric (60 points maximum)

Possible Points	Requirements
30	Implementing all five tasks (6 points each): - Requirements for each task: - Minimum of 10 "original" script command lines - Has one or more non-generic comments to explain what it is doing - Has user interaction
25	You don't have to do all of these but do at least five: - Redirecting stdin (5 points) - Redirecting stdout (5 points) - Redirecting stderr (5 points) - Use of permissions (5 points) - Use of filename expansion characters (5 points) - Use of absolute path (5 points) - Use of relative path (5 points) - Use of a PID (5 points) - Use of inodes (5 points) - Use of links (5 points) - Use of scheduling (5 points) - Use of a GID or group (5 points) - Use of a UID or user (5 points) - Use of a /dev/tty device (5 points) - Use of a signal (5 points) - Use of piping (5 points) - Use of an environment variable (5 points) - Use of /bin/mail (5 points) - Use of a conditional (5 points) The maximum for this section is 25 points.
5	Present your script to the class
Points lost	
-15	Fails to run from allscripts
-15	Other students in the class are unable to read and execute your script.
-15	Error messages are displayed when running one or more tasks
-up to 90	No credit for any task which contains unoriginal script code that: - Doesn't give full credit to the original author - Doesn't indicate where the code was obtained from - Doesn't include licensing terms - Violates copyright or licensing terms
Extra credit	
30	Up to three additional tasks (10 points each)

Make sure you have at least five of these implemented

Log in as cis90 and test your script so you don't lose any points

-15

Other students in the class are unable to read and execute your script.

```
[rsimms@oslab sun-hwa-scripts]$ ls -l /home/cis90/*/bin/myscript
-rwxr-x---. 1 beakie90 cis90  811 May 10 15:51 /home/cis90/beakie/bin/myscript
-rwxr-x---. 1 calmic90 cis90 4217 May 13 20:01 /home/cis90/calmic/bin/myscript
-rwxr-xr-x. 1 fahmic90 cis90 6271 May 13 23:31 /home/cis90/fahmic/bin/myscript
-rwxrwxr-x. 1 fitcon90 cis90 2813 May 13 21:09 /home/cis90/fitcon/bin/myscript
-rwxrwxr-x. 1 genmar90 cis90  546 Apr 30 20:48 /home/cis90/genmar/bin/myscript
-rwxrwxrwx. 1 gutemi90 cis90 2853 May 14 00:58 /home/cis90/gutemi/bin/myscript
-rwxr-xr-x. 1 hormat90 cis90 2281 May 13 23:39 /home/cis90/hormat/bin/myscript
-rwxr-x---. 1 keljos90 cis90 8890 May 14 05:13 /home/cis90/keljos/bin/myscript
-rwxr-x---. 1 lefnic90 cis90 6878 May 13 19:26 /home/cis90/lefnic/bin/myscript
-rwxr-x---. 1 lemrob90 cis90 2313 May 13 09:13 /home/cis90/lemrob/bin/myscript
-rwxr-x---. 1 matjon90 cis90 4339 May 13 15:27 /home/cis90/matjon/bin/myscript
-rwxr-x---. 1 milhom90 cis90 1526 May  5 16:22 /home/cis90/milhom/bin/myscript
-rwxrwxr-x. 1 patcar90 cis90 7632 May 13 17:17 /home/cis90/patcar/bin/myscript
-rwxr-x---. 1 rodduk90 cis90 4857 May  7 06:59 /home/cis90/rodduk/bin/myscript
-rwxr-x---. 1 rudtro90 cis90  7058 May 14 02:19 /home/cis90/rudtro/bin/myscript
-rwxr-x---. 1 simben90 cis90 10512 May  5 16:15 /home/cis90/simben/bin/myscript
-rwxr-xr-x. 1 tilbuz90 cis90 15442 May 13 12:23 /home/cis90/tilbuz/bin/myscript
-rwxr-xr-x. 1 vasjor90 cis90  5135 May 12 16:40 /home/cis90/vasjor/bin/myscript
-rwxr-xr-x. 1 weljon90 cis90  5605 May 13 14:03 /home/cis90/weljon/bin/myscript
-rwxr-x---. 1 weltim90 cis90 11485 May 13 20:32 /home/cis90/weltim/bin/myscript
[rsimms@oslab sun-hwa-scripts]$
```

Use: `chmod 750 ~/bin/myscript`
so classmates can run your script and it's not hackable

-15

Other students in the class are unable to read and execute your script.

```
[rsimms@oslab sun-hwa-scripts]$ ls -ld /home/cis90/*/bin/
drwxr-x---. 2 beakie90 cis90 4096 May 11 16:51 /home/cis90/beakie/bin/
drwxr-x---. 2 calmic90 cis90 4096 May 13 20:01 /home/cis90/calmic/bin/
drwxr-xr-x. 2 casric90 cis90 4096 Mar 26 11:36 /home/cis90/casric/bin/
drwxr-xr-x. 2 cis90     cis90 4096 Mar 26 11:36 /home/cis90/cis/bin/
drwxr-xr-x. 2 fahmic90 cis90 4096 May 13 23:37 /home/cis90/fahmic/bin/
drwxr-x---. 2 fitcon90 cis90 4096 May 13 21:09 /home/cis90/fitcon/bin/
drwxrwxr-x. 2 genmar90 cis90 4096 Apr 30 20:48 /home/cis90/genmar/bin/
drwxr-xr-x. 2 guest90  cis90 4096 Sep 11 2005 /home/cis90/guest/bin/
drwxr-x---. 2 gutemi90 cis90 4096 May 14 00:58 /home/cis90/gutemi/bin/
drwxr-x---. 2 hormat90 cis90 4096 May 13 23:26 /home/cis90/hormat/bin/
drwxr-x---. 2 keljos90 cis90 4096 May 14 05:14 /home/cis90/keljos/bin/
drwxr-x---. 2 lefnic90 cis90 4096 May 13 19:24 /home/cis90/lefnic/bin/
drwxr-x---. 2 lehreb90 cis90 4096 Apr 23 10:52 /home/cis90/lehreb/bin/
drwxr-xr-x. 2 lemrob90 cis90 4096 May 10 16:23 /home/cis90/lemrob/bin/
drwxr-x---. 2 matjon90 cis90 4096 May 13 15:29 /home/cis90/matjon/bin/
drwxr-x---. 2 milhom90 cis90 4096 May 5 16:22 /home/cis90/milhom/bin/
drwx-----. 2 mosmic90 cis90 4096 Apr 24 12:00 /home/cis90/mosmic/bin/
drwxr-x---. 3 patcar90 cis90 4096 May 13 17:17 /home/cis90/patcar/bin/
drwxr-x---. 2 perste90 cis90 4096 Apr 23 16:49 /home/cis90/perste/bin/
drwxr-x---. 2 ramjua90 cis90 4096 Apr 23 17:51 /home/cis90/ramjua/bin/
drwxr-xr-x. 2 rodduk90 cis90 4096 May 7 09:29 /home/cis90/rodduk/bin/
drwxr-x---. 2 rudtro90 cis90 4096 May 14 02:19 /home/cis90/rudtro/bin/
drwxr-x---. 2 simben90 cis90 4096 May 7 11:56 /home/cis90/simben/bin/
drwxr-x---. 2 tilbuz90 cis90 4096 May 13 13:16 /home/cis90/tilbuz/bin/
drwxr-x---. 2 vasjor90 cis90 4096 May 13 21:47 /home/cis90/vasjor/bin/
drwxr-x---. 2 weljon90 cis90 4096 May 12 21:53 /home/cis90/weljon/bin/
drwxr-x---. 2 weltim90 cis90 4096 May 13 20:32 /home/cis90/weltim/bin/
```

Use: **chmod 750 ~/bin** (local bin directory)
so classmates can run your script

-15

Other students in the class are unable to read and execute your script.

```
[rsimms@oslab sun-hwa-scripts]$ ls -ld /home/cis90/?????
drwxr-xr-x. 15 beakie90 cis90 4096 May 11 16:51 /home/cis90/beakie
drwxr-xr-x. 20 calmic90 cis90 4096 May 13 20:01 /home/cis90/calmic
drwxr-xr-x. 9 casric90 cis90 4096 Mar 26 11:36 /home/cis90/casric
drwxr-xr-x. 21 fahmic90 cis90 4096 May 13 23:31 /home/cis90/fahmic
drwxr-xr-x. 17 fitcon90 cis90 4096 May 13 21:09 /home/cis90/fitcon
drwxr-xr-x. 20 genmar90 cis90 4096 May 14 06:21 /home/cis90/genmar
drwxr-xr-x. 20 gutemi90 cis90 4096 May 14 00:58 /home/cis90/gutemi
drwxr-xr-x. 17 hormat90 cis90 4096 May 13 23:38 /home/cis90/hormat
drwxr-xr-x. 21 keljos90 cis90 4096 May 14 05:13 /home/cis90/keljos
drwxr-xr-x. 18 lefnic90 cis90 4096 May 13 19:29 /home/cis90/lefnic
drwxr-xr-x. 15 lehreb90 cis90 4096 May 14 00:08 /home/cis90/lehreb
drwxr-xr-x. 23 lemrob90 cis90 4096 May 10 11:07 /home/cis90/lemrob
drwxr-xr-x. 22 matjon90 cis90 4096 May 13 15:29 /home/cis90/matjon
drwxr-xr-x. 10 milhom90 cis90 4096 May 5 16:24 /home/cis90/milhom
drwxr-xr-x. 15 mosmic90 cis90 4096 May 11 18:10 /home/cis90/mosmic
drwxr-xr-x. 20 patcar90 cis90 4096 May 13 17:17 /home/cis90/patcar
drwxr-xr-x. 20 perste90 cis90 4096 May 7 23:11 /home/cis90/perste
drwxr-xr-x. 16 ramjua90 cis90 4096 May 13 19:47 /home/cis90/ramjua
drwxr-xr-x. 10 rodduk90 cis90 4096 May 7 09:31 /home/cis90/rodduk
drwxr-xr-x. 17 rudtro90 cis90 4096 May 14 02:21 /home/cis90/rudtro
drwxr-xr-x. 24 simben90 cis90 4096 May 8 07:15 /home/cis90/simben
drwxr-xr-x. 20 tilbuz90 cis90 4096 May 13 13:16 /home/cis90/tilbuz
drwxr-xr-x. 22 vasjor90 cis90 4096 May 12 00:02 /home/cis90/vasjor
drwxr-xr-x. 18 weljon90 cis90 4096 May 12 21:53 /home/cis90/weljon
drwxr-xr-x. 17 weltim90 cis90 4096 May 13 20:32 /home/cis90/weltim
[rsimms@oslab sun-hwa-scripts]$
```

Use: **chmod 750 ~** (home directory)
so classmates can run your script

-15

Fails to run from allscripts

```
[rsimms@oslab sun-hwa-scripts]$ for i in `cat /etc/passwd | grep cis90 | cut -f6 -d":"`;
do file=$i/bin/myscript; if [ -e "$file" ]; then echo -n $file exists ;if [ -r "$file" ];
then echo -n " and" is readable; else echo -n but is not readable; fi; if [ -x "$file" ];
then echo " and" executable; else echo but not executable; fi; else echo $file does not
exist; fi; done
/home/cis90/guest/bin/myscript does not exist
/home/cis90/cis/bin/myscript does not exist
/home/cis90/simben/bin/myscript exists and is readable and executable
/home/cis90/milhom/bin/myscript exists and is readable and executable
/home/cis90/rodduk/bin/myscript exists and is readable and executable
/home/cis90/beakie/bin/myscript exists and is readable and executable
/home/cis90/calmic/bin/myscript exists and is readable and executable
/home/cis90/casric/bin/myscript does not exist
/home/cis90/fahmic/bin/myscript exists and is readable and executable
/home/cis90/fitcon/bin/myscript exists and is readable and executable
/home/cis90/gutemi/bin/myscript exists and is readable and executable
/home/cis90/hormat/bin/myscript exists and is readable and executable
/home/cis90/keljos/bin/myscript exists and is readable and executable
/home/cis90/lefnic/bin/myscript exists and is readable and executable
/home/cis90/lehreb/bin/myscript does not exist
/home/cis90/lemrob/bin/myscript exists and is readable and executable
/home/cis90/patcar/bin/myscript exists and is readable and executable
/home/cis90/perste/bin/myscript does not exist
/home/cis90/ramjua/bin/myscript does not exist
/home/cis90/rudtro/bin/myscript exists and is readable and executable
/home/cis90/tilbuz/bin/myscript exists and is readable and executable
/home/cis90/vasjor/bin/myscript exists and is readable and executable
/home/cis90/weltim/bin/myscript exists and is readable and executable
/home/cis90/mosmic/bin/myscript does not exist
/home/cis90/weljon/bin/myscript exists and is readable and executable
/home/cis90/matjon/bin/myscript exists and is readable and executable
/home/cis90/genmar/bin/myscript exists and is readable and executable
[rsimms@oslab sun-hwa-scripts]$
```

*Make sure
your myscript
file runs form
allscripts*

Fall 2014 Linux Classes

CIS 90 Introduction to UNIX/Linux

Provides a technical overview of the UNIX/Linux operating system, including hands-on experience with commands, files, and tools. Recommended Preparation: CS 1L or CIS 72.

Transfer Credit: CSU.

Section	Days	Times	Units	Instructor	Room
84743	T	01:00PM-04:05PM	3.00	R.Simms	OL
Section 84743 is an ONLINE course. Meets weekly throughout the semester online during the scheduled times by remote technology. For details, see instructor's web page at go.cabrillo.edu/online .					
86576	T	01:00PM-04:05PM	3.00	R.Simms	828

CIS 191AB UNIX/Linux Installation, Configuration and Administration

Introduces skills required to administer UNIX/Linux systems. Prerequisite: CIS 90 or equivalent.

Section	Days	Times	Units	Instructor	Room
84737	TH	01:00PM-05:05PM	4.00	M.Matera	OL
&	Arr.	Arr.		M.Matera	OL
Section 84737 is an ONLINE course. Meets weekly throughout the semester online at the scheduled times by remote technology with an additional 4 hr 5 min online lab per week. For details, see instructor's web page at go.cabrillo.edu/online .					
86577	TH	01:00PM-05:05PM	4.00	M.Matera	828
&	Arr.	Arr.		M.Matera	OL
Section 86577 is a Hybrid ONLINE course. Meets weekly throughout the semester at the scheduled times with an additional 4 hr 5 min online lab per week. For details, see instructor's web page at go.cabrillo.edu/online .					

<http://simms-teach.com/cis90grades.php>

GRADES

- Check your progress on the Grades page
- If you haven't already, send me a student survey to get your LOR secret code name
- Graded labs & tests are placed in your home directories on Opus
- Answers to labs, tests and quizzes are in the `/home/cis90/answers` directory on Opus

Current Point Tally

As of 5/13/2013

Points that could have been earned:

10 quizzes:	30 points
10 labs:	300 points
2 tests:	60 points
3 forum quarters:	60 points
Total:	450 points

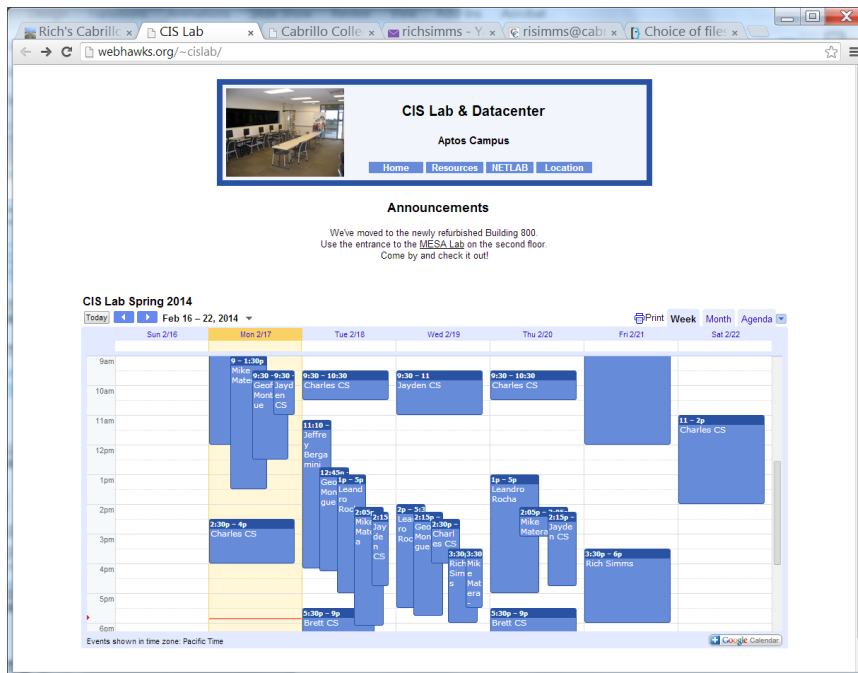
Percentage	Total Points	Letter Grade	Pass/No Pass
90% or higher	504 or higher	A	Pass
80% to 89.9%	448 to 503	B	Pass
70% to 79.9%	392 to 447	C	Pass
60% to 69.9%	336 to 391	D	No pass
0% to 59.9%	0 to 335	F	No pass

alatar: 70% (318 of 450 points)
 anborn: 82% (373 of 450 points)
 aragorn: 78% (354 of 450 points)
 arwen: 107% (483 of 450 points)
 celebrian: 97% (440 of 450 points)
 dwalin: 94% (425 of 450 points)
 eomer: 92% (418 of 450 points)
 faramir: 96% (432 of 450 points)
 frodo: 79% (357 of 450 points)
 gwaihir: 105% (473 of 450 points)
 ioreth: 94% (423 of 450 points)
 legolas: 90% (407 of 450 points)

marhari: 73% (329 of 450 points)
 orome: 75% (340 of 450 points)
 pippen: 66% (298 of 450 points)
 quickbeam: 92% (414 of 450 points)
 rian: 0% (0 of 450 points)
 samwise: 84% (379 of 450 points)
 strider: 88% (396 of 450 points)
 treebeard: 105% (475 of 450 points)
 tulkas: 88% (399 of 450 points)
 ulmo: 85% (386 of 450 points)



CIS Lab Schedule <http://webhawks.org/~cislabs/>



Work on assignments
together with other
classmates



Get help from instructors
and student lab assistants

Rich is in the lab Wednesdays and Fridays from 3:30 - 6:00 PM

Final Exam

Next week is **Cabrillo Finals Week**

Test #3 (final exam)

- ~~Must be face-to-face or proctored (not online using CCC Confer).~~
- Room 828 on campus using Blackboard
- Timed test - 170 minutes (no 11:59PM grace period)

Important Update:
The final exam can optionally be taken off-campus over the Internet using Blackboard

	5/21	Test #3 (the final exam) Time • 7:00AM - 9:50AM in Room 828 Materials • Test (download)		5 posts Lab X1 Lab X2
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- Practice test available
- **Make sure** you can log into Blackboard **before** the final starts!

Final Exam (Test #3)

- **The Final Exam is May 21 - 7:00AM to 9:50AM**
- **The final exam will be Test #3
(worth 30 points + 3 points extra credit)**
 - Open book, open notes, open computer.
 - During the test you must work alone and not ask or give assistance to others.
 - Blackboard test, so make sure you can log into Blackboard before the test starts so you don't waste valuable time on this activity.

Final Exam

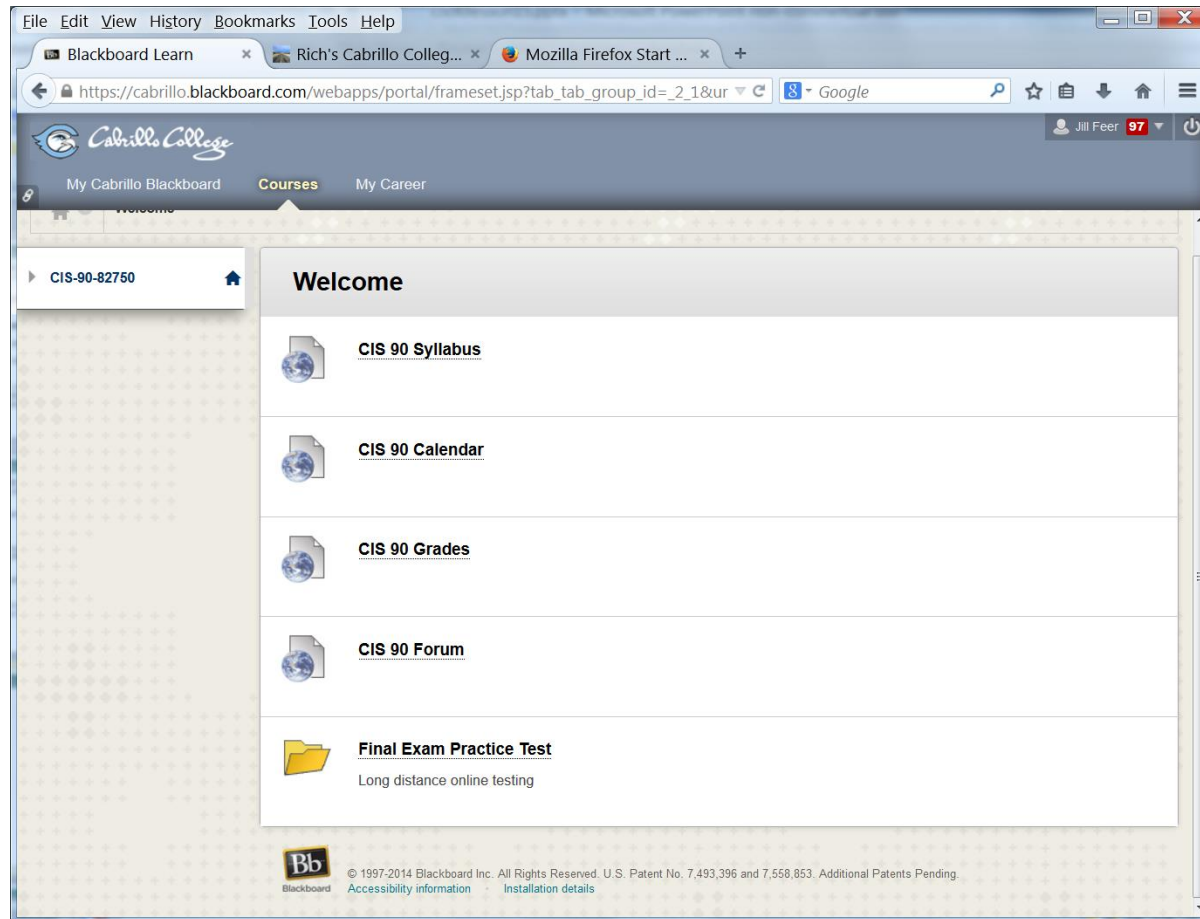
The CIS 90 Final Exam is Test #3

- **A Practice Test 3 is available on Blackboard**

- Advice:

- ❖ Work EVERY question on the practice test and NOTE exactly the steps required to answer each question.
 - ❖ Use the notes you took doing the practice test on the final exam.
- You may work with others and use the forum to discuss questions and answers on the practice test prior to the final exam.

Make sure you can access Blackboard before the test starts

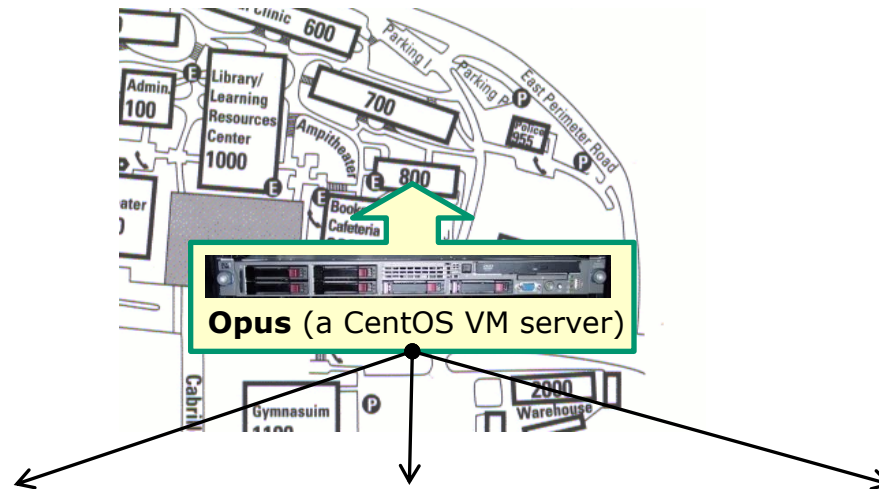


Doing the practice test will verify your Blackboard access

File Transfer

File Transfer

Downloading your Opus files to your home computer



Windows



Mac



Linux

Many ways to transfer files:

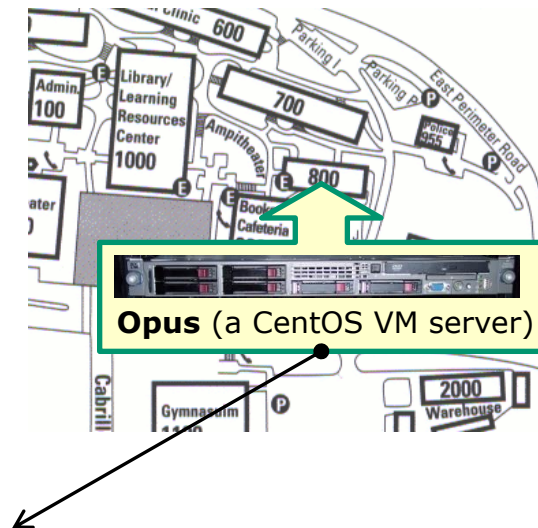
- Between Linux and Windows
 - Filezilla or related applications
 - Putty SCP (PSCP)
- Between Linux and Linux/Mac
 - Filezilla or related applications
 - scp command

File Transfer To Windows

FileZilla

File Transfer

Downloading your Opus files to your home computer



Windows

Using  FileZilla

File Transfer

<http://filezilla-project.org>



FileZilla On Windows, connect to your Opus

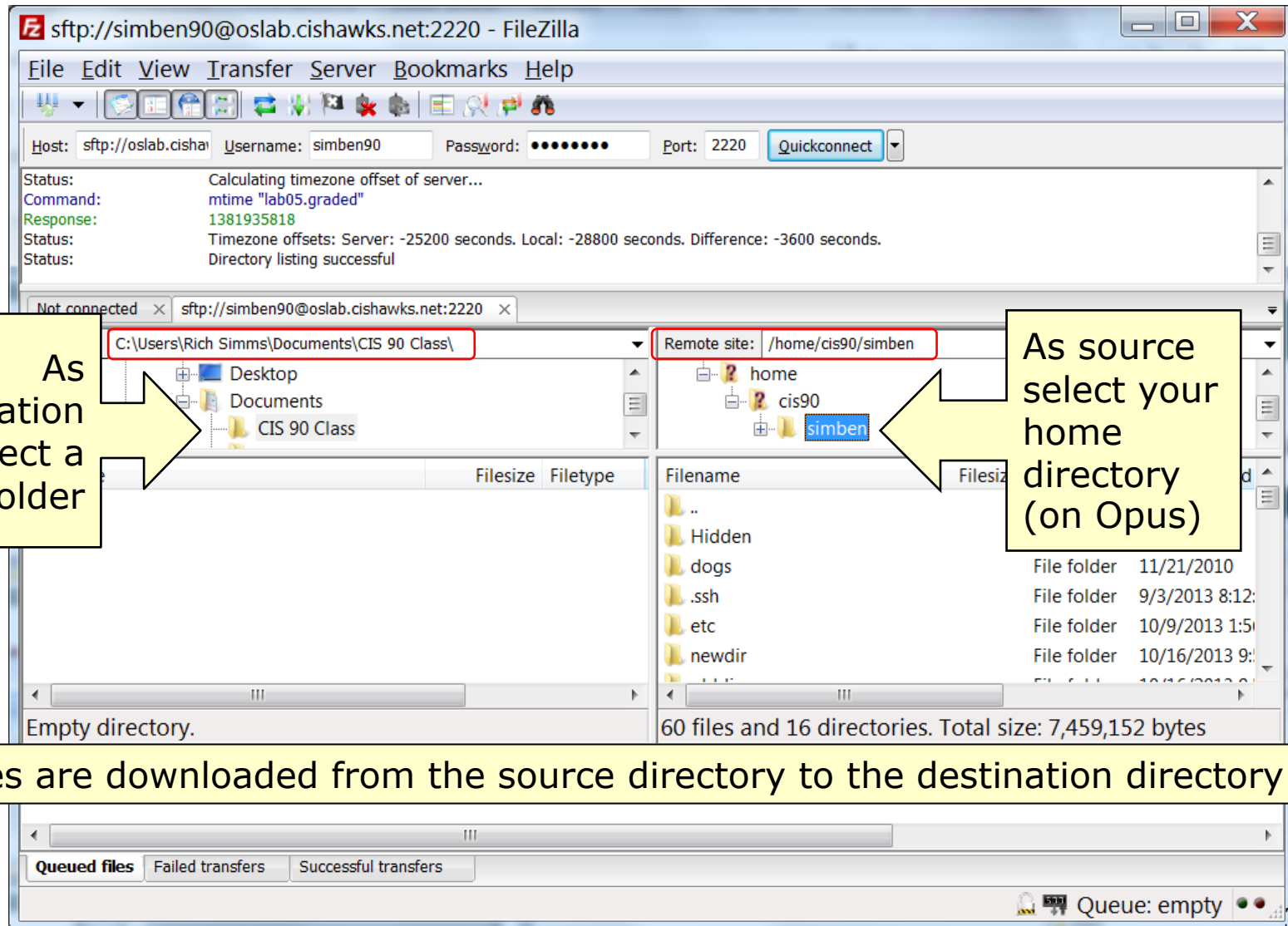
The screenshot shows the FileZilla client interface with the following components:

- Host:** sftp://oslab.cishawks.net (labeled with a yellow box and arrow)
- Username:** simben90 (labeled with a yellow box and arrow)
- Password:** [Redacted] (labeled with a yellow box and arrow)
- Port:** 2220 (labeled with a yellow box and arrow)
- Quickconnect** button
- Status:** Calculating timezone offset of server...
- Command:** mtime "lab05.graded"
- Response:** 1381935818
- Local site:** C:\Users\Rich Simms\Documents\CIS 90 Class
- Remote site:** /home/cis90/simben
- Local directory view:** Desktop, Documents, CIS 90 Class
- Remote directory view:** home, cis90, simben
- Local file list:** Empty directory.
- Remote file list:**

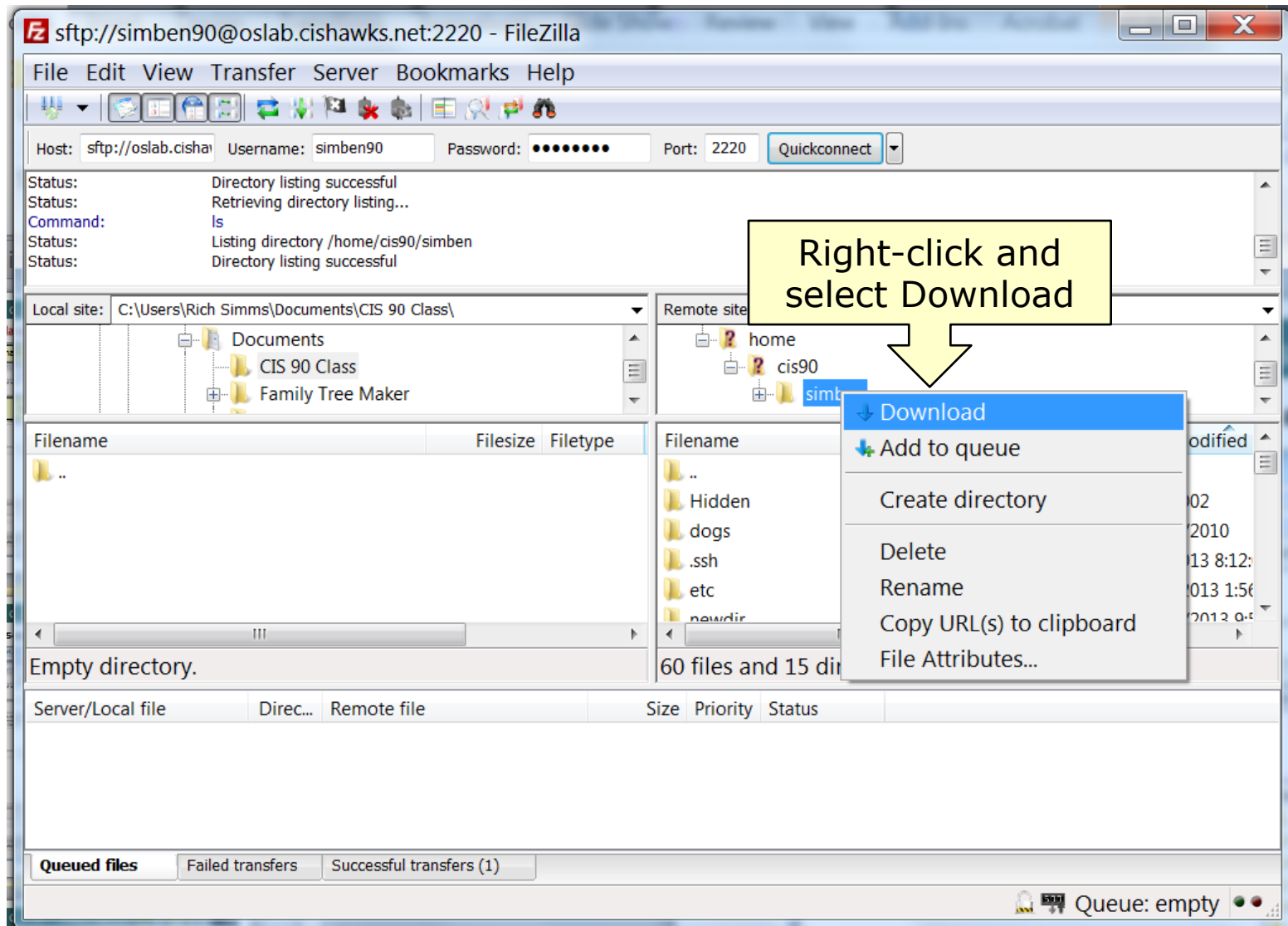
Filename	Filesize	Filetype	Last modified
..			
Hidden		File folder	2/1/2002
dogs		File folder	11/21/2010
.ssh		File folder	9/3/2013 8:12:
etc		File folder	10/9/2013 1:50:
newdir		File folder	10/16/2013 9:00:
- Summary:** 60 files and 16 directories. Total size: 7,459,152 bytes
- Transfer Queue:** Queued files, Failed transfers, Successful transfers. Queue: empty



Select destination and source directories



Initiate Download





Monitor transfer progress

FileZilla window showing a connection to sftp://simben90@oslab.cishawks.net:2220. The interface displays the local site (C:\Users\Rich Simms\Documents\CIS 90 Class\), the remote site (/home/cis90/simben/misc), and the transfer progress of files from the remote site to the local site.

Command Log:

```

Command: get "bin.tar" "C:\Users\Rich Simms\Documents\CIS 90 Class\simben\bin.tar"
Response: New directory is: "/home/cis90/simben/olddir"
Command: ls
Status: remote:/home/cis90/simben/bin.tar => local:C:\Users\Rich Simms\Documents\CIS 90 Class\simben\bin.tar
Status: Listing directory /home/cis90/simben/olddir
  
```

Local site: C:\Users\Rich Simms\Documents\CIS 90 Class\

Remote site: /home/cis90/simben/misc

Filename	Filesize	Filetype	Last modified
..			
simben		File folder	

Filename	Filesize	Filetype	Last modified
..			
mystery		File folder	9/2/2013 6:39
file.dos	148	DOS File	7/20/2001
manpage	10,576	File	7/20/2001

Transfer Progress:

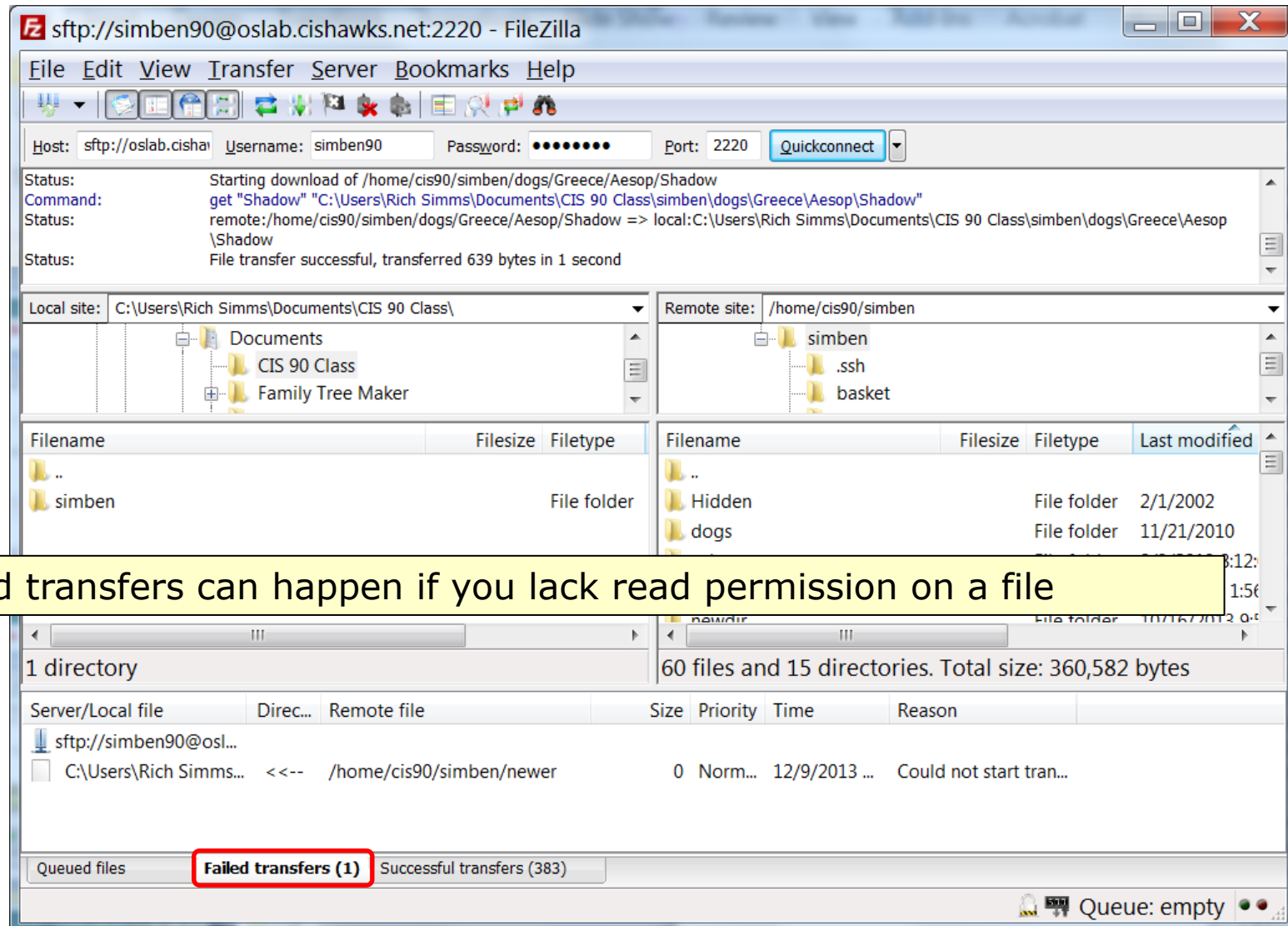
Server/Local file	Direc...	Remote file	Size	Priority	Status
sftp://simben90@osl...					
C:\Users\Rich Simms...	<--	/home/cis90/simben/bin.tar	71,680	Norm...	Transferring
00:00:00 elapsed	--:--:-- left	45.7%	32,768 bytes (? B/s)		
C:\Users\Rich Simms...	<--	/home/cis90/simben/lab04.g...	3,282	Norm...	

Queued files (92) | Failed transfers | Successful transfers (45)

Queue: >248.0

And away it goes downloading every file and directory it finds in the selected Opus directory to your local Windows destination folder

Failed transfers



sftp://simben90@oslab.cishawks.net:2220 - FileZilla

File Edit View Transfer Server Bookmarks Help

Host: sftp://oslab.cisha Username: simben90 Password: Port: 2220 Quickconnect

Status: Starting download of /home/cis90/simben/dogs/Greece/Aesop/Shadow
 Command: get "Shadow" "C:\Users\Rich Simms\Documents\CIS 90 Class\simben\dogs\Greece\Aesop\Shadow"
 Status: remote:/home/cis90/simben/dogs/Greece/Aesop/Shadow => local:C:\Users\Rich Simms\Documents\CIS 90 Class\simben\dogs\Greece\Aesop\Shadow
 Status: File transfer successful, transferred 639 bytes in 1 second

Local site: C:\Users\Rich Simms\Documents\CIS 90 Class\
 Remote site: /home/cis90/simben

Filename	Filesize	Filetype	Last modified
..			
simben		File folder	

Filename	Filesize	Filetype	Last modified
..			
Hidden		File folder	2/1/2002
dogs		File folder	11/21/2010

1 directory

60 files and 15 directories. Total size: 360,582 bytes

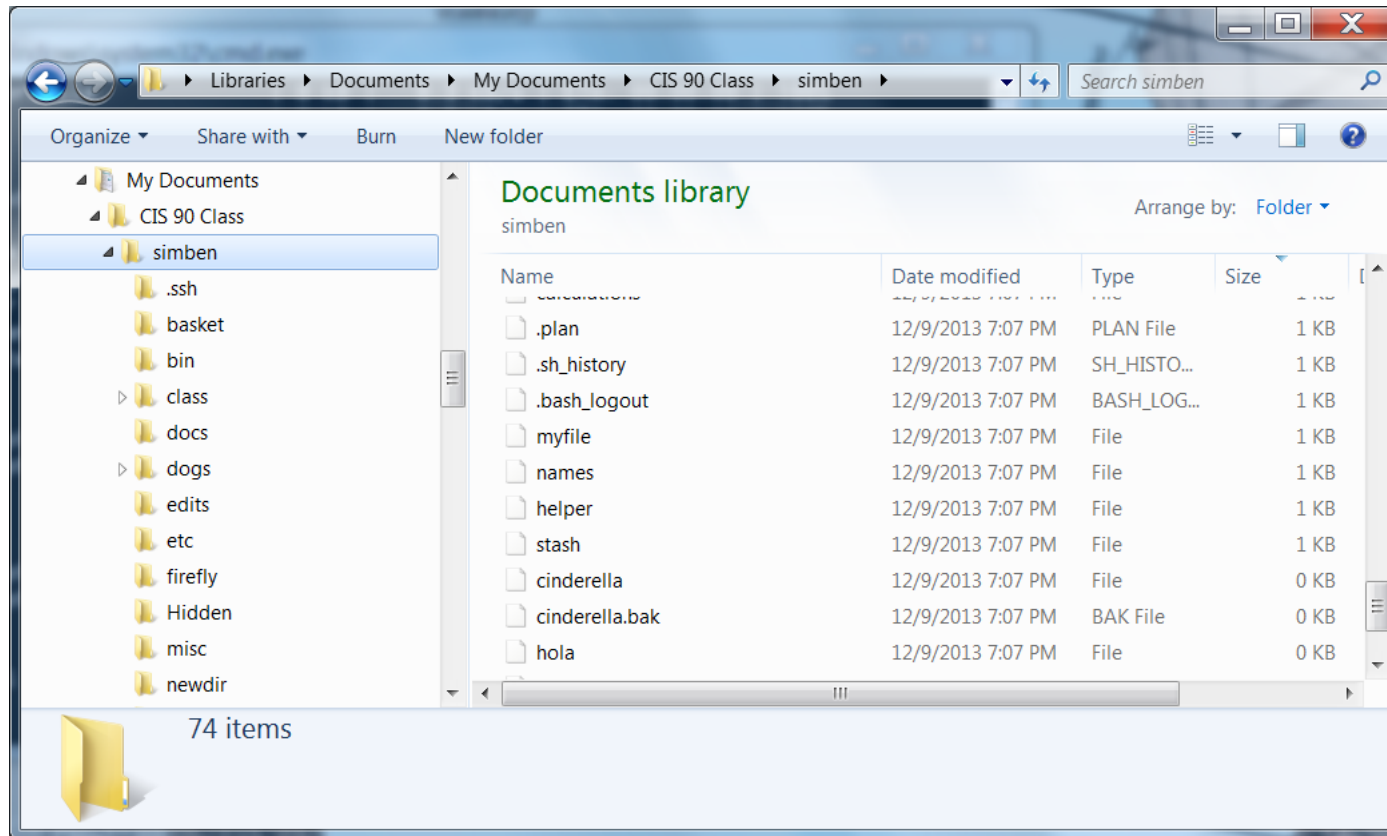
Server/Local file	Dir...	Remote file	Size	Priority	Time	Reason
sftp://simben90@osl...						
C:\Users\Rich Simms...	<<--	/home/cis90/simben/newer	0	Norm...	12/9/2013 ...	Could not start tran...

Queued files **Failed transfers (1)** Successful transfers (383)

Queue: empty

File transfers

Your CIS 90 home directory files are
now on Windows



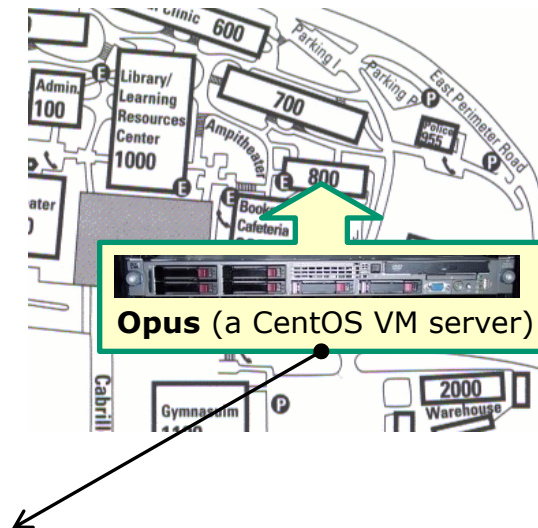
Empty files are copied as well

File Transfer To Windows

PSCP

File Transfer

Downloading your Opus files to your home computer

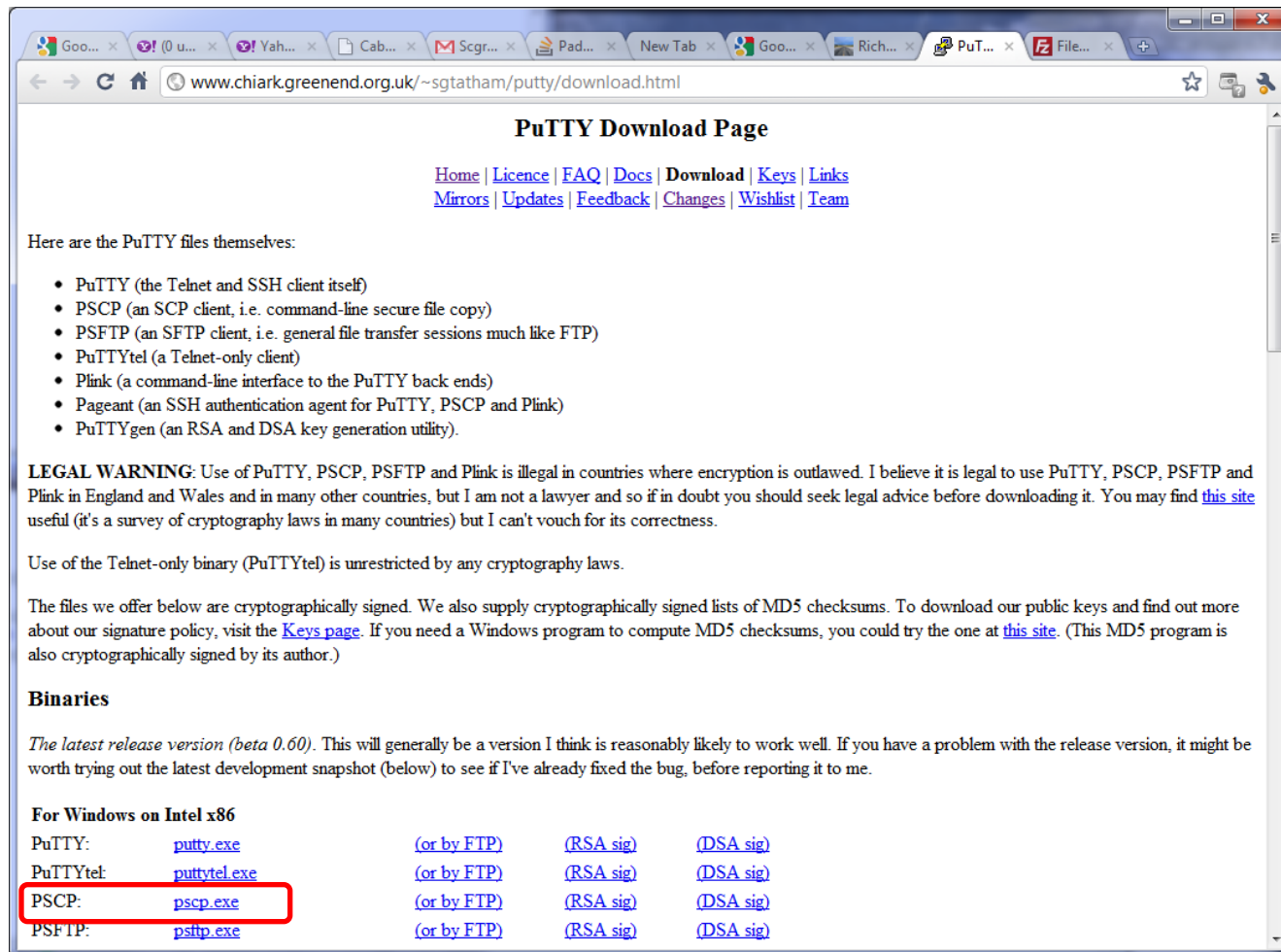


Windows

Using PSCP

PSCP (Putty SCP) Downloading

<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>



The screenshot shows a web browser window displaying the 'PuTTY Download Page'. The browser's address bar shows the URL 'www.chiark.greenend.org.uk/~sgtatham/putty/download.html'. The page title is 'PuTTY Download Page'. Below the title, there are several links: Home, Licence, FAQ, Docs, Download, Keys, Links, Mirrors, Updates, Feedback, Changes, Wishlist, and Team. The main content area starts with the text 'Here are the PuTTY files themselves:' followed by a bulleted list of files: PuTTY (the Telnet and SSH client itself), PSCP (an SCP client, i.e. command-line secure file copy), PSFTP (an SFTP client, i.e. general file transfer sessions much like FTP), PuTTYtel (a Telnet-only client), Plink (a command-line interface to the PuTTY back ends), Pageant (an SSH authentication agent for PuTTY, PSCP and Plink), and PuTTYgen (an RSA and DSA key generation utility). Below this list, there is a 'LEGAL WARNING' section stating that use of PuTTY, PSCP, PSFTP and Plink is illegal in countries where encryption is outlawed. It also mentions that the files are cryptographically signed and provides links to the 'Keys page' and 'this site' for more information. The 'Binaries' section follows, stating that the latest release version is beta 0.60. At the bottom, there is a table of binaries for Windows on Intel x86. The table has four columns: the file name, the download method (or by FTP), the RSA signature, and the DSA signature. The rows are for PuTTY, PuTTYtel, PSCP, and PSFTP. The 'PSCP' row is highlighted with a red rectangle.

PuTTY Download Page

[Home](#) | [Licence](#) | [FAQ](#) | [Docs](#) | [Download](#) | [Keys](#) | [Links](#)
[Mirrors](#) | [Updates](#) | [Feedback](#) | [Changes](#) | [Wishlist](#) | [Team](#)

Here are the PuTTY files themselves:

- PuTTY (the Telnet and SSH client itself)
- PSCP (an SCP client, i.e. command-line secure file copy)
- PSFTP (an SFTP client, i.e. general file transfer sessions much like FTP)
- PuTTYtel (a Telnet-only client)
- Plink (a command-line interface to the PuTTY back ends)
- Pageant (an SSH authentication agent for PuTTY, PSCP and Plink)
- PuTTYgen (an RSA and DSA key generation utility).

LEGAL WARNING: Use of PuTTY, PSCP, PSFTP and Plink is illegal in countries where encryption is outlawed. I believe it is legal to use PuTTY, PSCP, PSFTP and Plink in England and Wales and in many other countries, but I am not a lawyer and so if in doubt you should seek legal advice before downloading it. You may find [this site](#) useful (it's a survey of cryptography laws in many countries) but I can't vouch for its correctness.

Use of the Telnet-only binary (PuTTYtel) is unrestricted by any cryptography laws.

The files we offer below are cryptographically signed. We also supply cryptographically signed lists of MD5 checksums. To download our public keys and find out more about our signature policy, visit the [Keys page](#). If you need a Windows program to compute MD5 checksums, you could try the one at [this site](#). (This MD5 program is also cryptographically signed by its author.)

Binaries

The latest release version (beta 0.60). This will generally be a version I think is reasonably likely to work well. If you have a problem with the release version, it might be worth trying out the latest development snapshot (below) to see if I've already fixed the bug, before reporting it to me.

For Windows on Intel x86

PuTTY:	putty.exe	(or by FTP)	(RSA sig)	(DSA sig)
PuTTYtel:	puttytel.exe	(or by FTP)	(RSA sig)	(DSA sig)
PSCP:	pscp.exe	(or by FTP)	(RSA sig)	(DSA sig)
PSFTP:	psftp.exe	(or by FTP)	(RSA sig)	(DSA sig)

*Download the
pscp.exe file and
place it in your
windows folder*

PSCP

PSCP syntax follows **scp** command syntax

recursive

*source
directory to
copy*

pscp -P 2220 -r simben90@oslab.cishawks.net:/home/cis90/simben .

*destination is
"here" (the
current local
directory)*

*Note: empty
files or files
lacking read
permission
will not be
copied.*

```
C:\Windows\system32\cmd.exe
C:\Users\Rich Simms\Documents\CIS 90 Class>pscp -P 2220 -r simben90@oslab.cishawks.net:/home/cis90/simben .
simben90@oslab.cishawks.net's password:
lab05.graded | 0 kB | 0.9 kB/s | ETA: 00:00:00 | 100%
names | 0 kB | 0.0 kB/s | ETA: 00:00:00 | 100%
bigshell | 0 kB | 0.1 kB/s | ETA: 00:00:00 | 100%
treasure | 0 kB | 0.1 kB/s | ETA: 00:00:00 | 100%
.trove | 1 kB | 1.9 kB/s | ETA: 00:00:00 | 100%
treat2 | 0 kB | 0.7 kB/s | ETA: 00:00:00 | 100%
lab02.graded | 1 kB | 1.5 kB/s | ETA: 00:00:00 | 100%
uhistory.bak | 14 kB | 14.1 kB/s | ETA: 00:00:00 | 100%
.uiminfo | 7 kB | 7.3 kB/s | ETA: 00:00:00 | 100%
treat3 | 1 kB | 1.1 kB/s | ETA: 00:00:00 | 100%
lab02.graded | 1 kB | 1.5 kB/s | ETA: 00:00:00 | 100%
lab04.graded | 3 kB | 3.2 kB/s | ETA: 00:00:00 | 100%
lab03.graded | 17 kB | 17.8 kB/s | ETA: 00:00:00 | 100%
lab01.graded | 0 kB | 0.6 kB/s | ETA: 00:00:00 | 100%
treat4 | 0 kB | 1.0 kB/s | ETA: 00:00:00 | 100%
treat5 | 0 kB | 0.8 kB/s | ETA: 00:00:00 | 100%
treat6 | 0 kB | 0.7 kB/s | ETA: 00:00:00 | 100%
sonnet10 | 0 kB | 0.6 kB/s | ETA: 00:00:00 | 100%
sonnet15 | 0 kB | 0.6 kB/s | ETA: 00:00:00 | 100%
sonnet12 | 0 kB | 0.6 kB/s | ETA: 00:00:00 | 100%
sonnet11 | 0 kB | 0.6 kB/s | ETA: 00:00:00 | 100%
sonnet13 | 0 kB | 0.6 kB/s | ETA: 00:00:00 | 100%
```

Navigate to the local folder where you want to download your Opus files. Use the **pscp** command with the **-r** option to recursively download all the files from your home directory to the local Windows folder.

PSCP

Failed Transfers

```

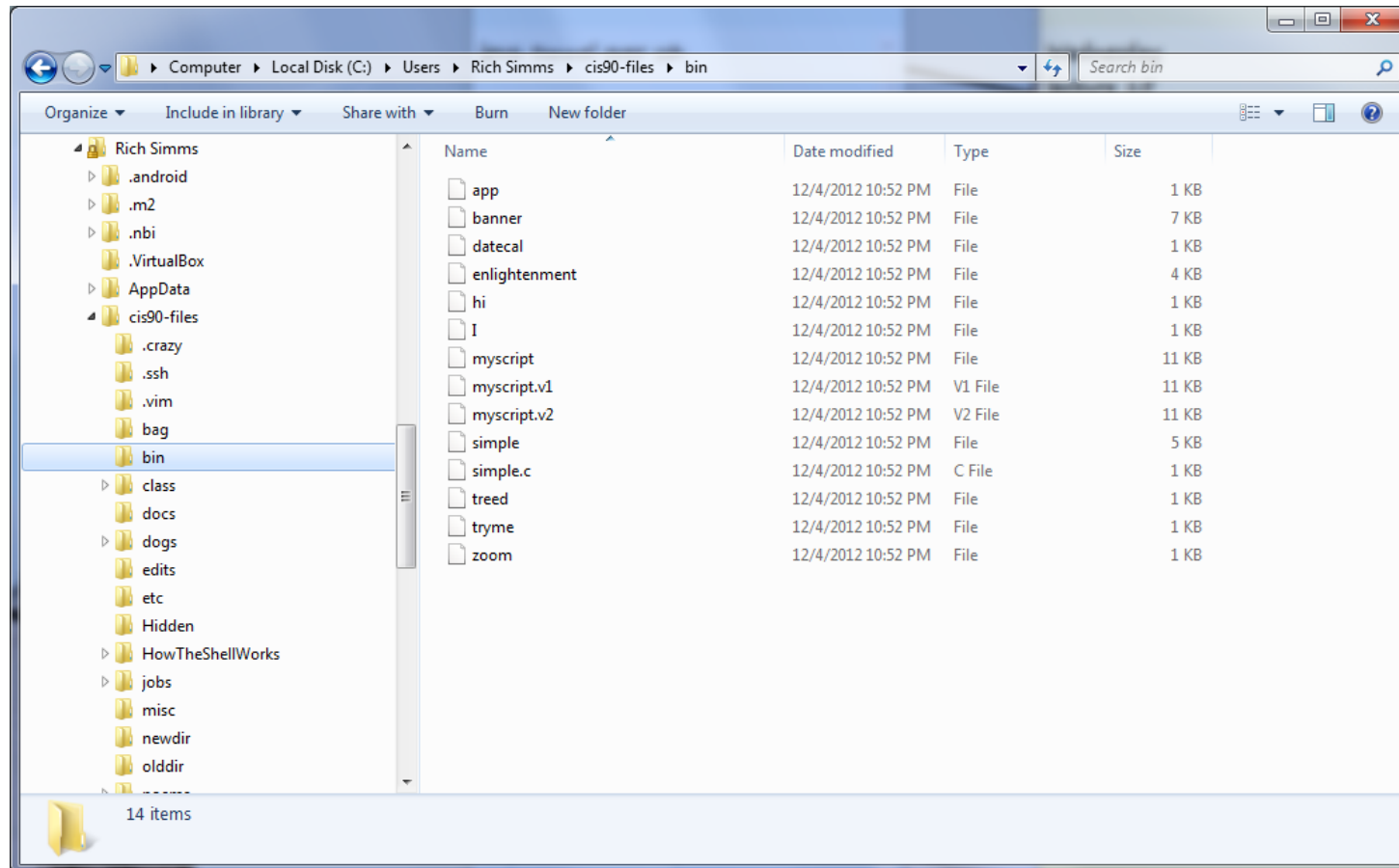
C:\Windows\system32\cmd.exe
Moon          | 1 kB | 1.3 kB/s | ETA: 00:00:00 | 100%
readme        | 0 kB | 0.1 kB/s | ETA: 00:00:00 | 100%
Hamlet        | 0 kB | 0.2 kB/s | ETA: 00:00:00 | 100%
Caesar        | 0 kB | 0.8 kB/s | ETA: 00:00:00 | 100%
Romeo         | 0 kB | 0.8 kB/s | ETA: 00:00:00 | 100%
author        | 0 kB | 0.0 kB/s | ETA: 00:00:00 | 100%
Persuasion    | 0 kB | 0.7 kB/s | ETA: 00:00:00 | 100%
author        | 0 kB | 0.0 kB/s | ETA: 00:00:00 | 100%
Sensibility   | 0 kB | 0.7 kB/s | ETA: 00:00:00 | 100%
Phaedo        | 2 kB | 2.1 kB/s | ETA: 00:00:00 | 100%
author        | 0 kB | 0.0 kB/s | ETA: 00:00:00 | 100%
Apology       | 1 kB | 1.8 kB/s | ETA: 00:00:00 | 100%
Shadow        | 0 kB | 0.6 kB/s | ETA: 00:00:00 | 100%
Ass           | 0 kB | 0.9 kB/s | ETA: 00:00:00 | 100%
author        | 0 kB | 0.0 kB/s | ETA: 00:00:00 | 100%
Fox           | 0 kB | 1.0 kB/s | ETA: 00:00:00 | 100%
errors        | 3 kB | 3.7 kB/s | ETA: 00:00:00 | 100%
myfiles       | 8 kB | 8.8 kB/s | ETA: 00:00:00 | 100%
.history      | 0 kB | 0.2 kB/s | ETA: 00:00:00 | 100%
whomai        | 0 kB | 0.1 kB/s | ETA: 00:00:00 | 100%
lab08 graded  | 5 kB | 5.1 kB/s | ETA: 00:00:00 | 100%
whoami        | 0 kB | 0.1 kB/s | ETA: 00:00:00 | 100%
pscp: unable to open /home/cis90/simben/newer: permission denied
C:\Users\Rich Simms\Documents\CIS 90 Class>
  
```

*Note: empty files are ignored and **not** copied*

Files lacking read permission generate an error and are not copied

PSCP

Your CIS 90 files are now on Windows



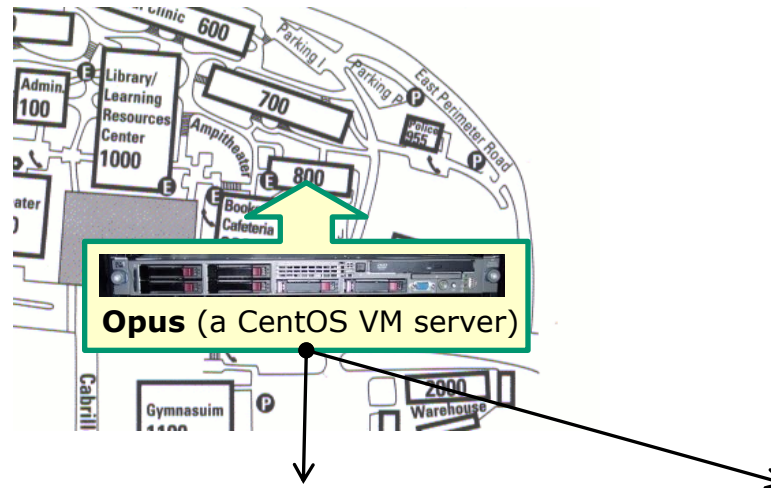
CIS 90 files copied from Opus to home Windows system

File Transfer Linux or Mac

scp

File Transfer

Downloading your Opus files to your home computer



Mac



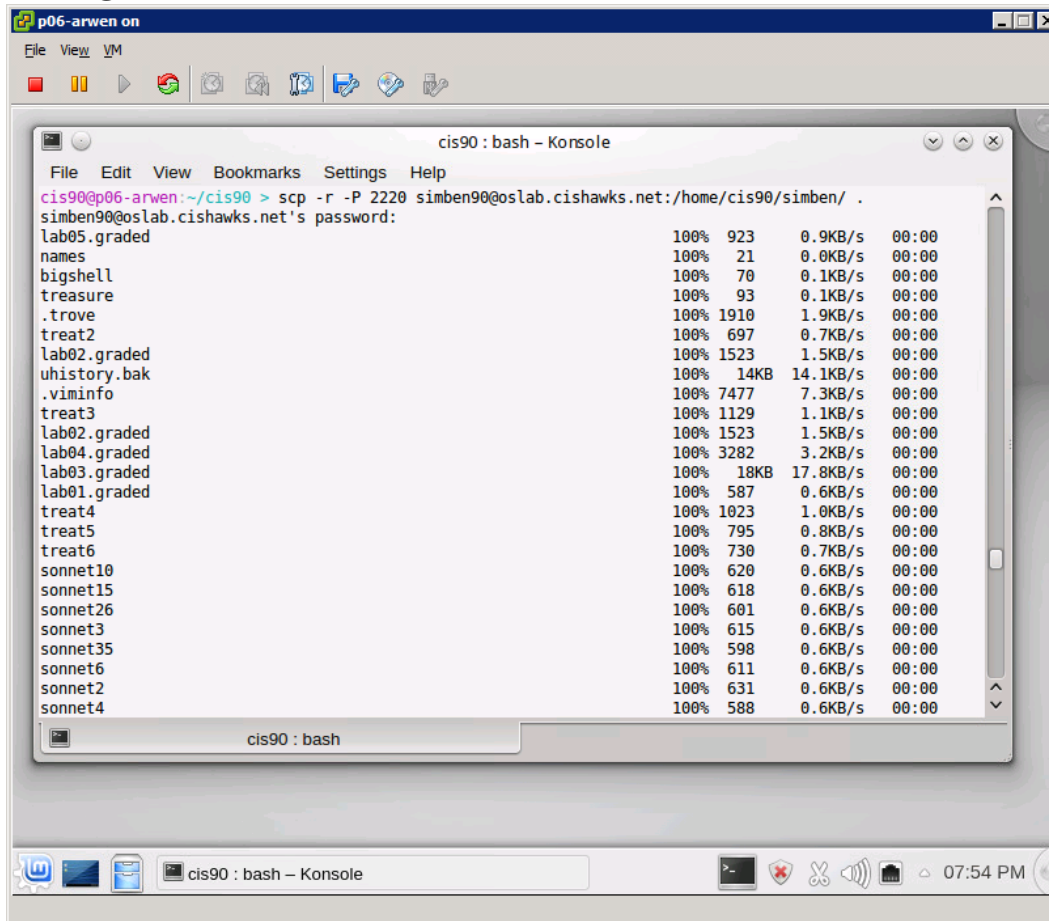
Linux

File Transfer

Downloading your Opus files to Pxx-Arwen (Linux Mint VM)

```
scp -P 2220 -r simben90@oslab.cishawks.net:/home/cis90/simben .
```

Arwen



*Source
directory on
Opus*

*Destination
directory on
Arwen*

Files lacking read
permission generate
an error and are not
copied

Empty files are copied
as well

File Transfer

Downloading your Opus files to Pxx-Arwen (Linux Mint VM)

```

cis90@p06-arwen:~/cis90 > ls
simben
cis90@p06-arwen:~/cis90 > ls simben
basket      class      experiment100  lab02.graded  labx1.simben90  names      the
bf          cmds      experiment101  lab03.graded  labx2           new         Torvalds
bigfile     dead.letter  experiment99   lab04.graded  labx2.graded    newdir     treat1
bigshell    docs      files.out     lab05.graded  labx2.simben90  old        uhistory
bin         dogs      firefly       lab07         letter          olddir     uhistory.bak
bin.tar     dogs.tar   helper        lab07.graded  log            poems      whoami
calculations edits      Hidden        lab08         myfile         smallshell whomai
cinderella  errors    hola          lab08.graded  myfiles        stash      words
cinderella.bak etc       lab01.graded  lab09         test01.graded
cis90@p06-arwen:~/cis90 > clear
cis90@p06-arwen:~/cis90 >
  
```

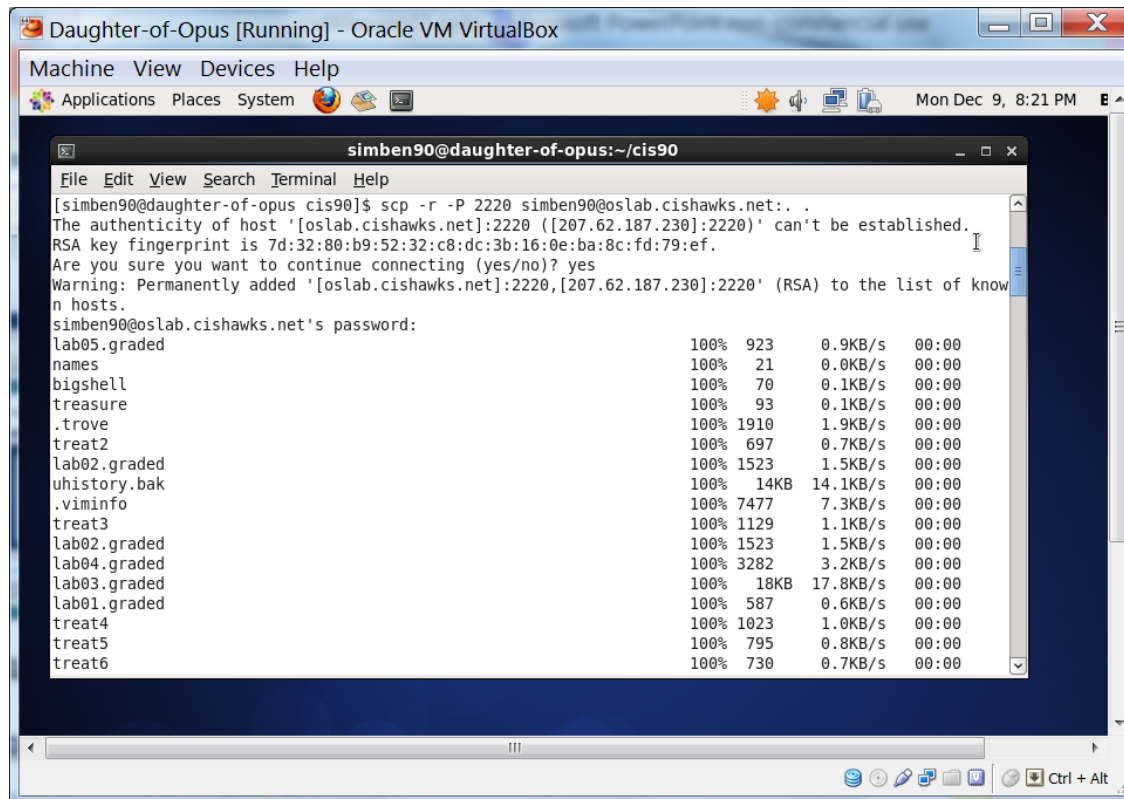
*Now your Opus CIS
90 files are on Arwen*

File Transfer

Downloading your Opus files to Daughter-of-Opus (CentOS)

```
scp -P 2220 -r simben90@oslab.cishawks.net:.. .
```

Daughter-of-Opus



Source
directory on
Opus

Destination
directory on
Daughter-of-
Opus

File Transfer

Downloading your Opus files to Daughter-of-Opus (CentOS)

The screenshot shows a terminal window titled "simben90@daughter-of-opus:~/cis90" within an Oracle VM VirtualBox environment. The terminal displays the output of the 'ls' command, listing various files and directories. The files are color-coded: blue for directories, green for executables, red for archives, and black for regular files. The output is as follows:

```

[simben90@daughter-of-opus cis90]$ ls
basket      class      experiment100  lab02.graded  labx1.simben90  names      the
bf          cmds      experiment101  lab03.graded  labx2          new        Torvalds
bigfile     dead.letter  experiment99   lab04.graded  labx2.graded   newdir     treat1
bigshell    docs      files.out     lab05.graded  labx2.simben90  old        uhistory
bin         dogs      firefly       lab07         letter          olddir     uhistory.bak
bin.tar     dogs.tar   helper        lab07.graded  log            poems      whoami
calculations edits      Hidden        lab08         myfile          smallshell  whomai
cinderella  errors    hola          lab08.graded  myfiles        stash       words
cinderella.bak etc       lab01.graded  lab09         test01.graded
  
```

CIS 90 files copied from Opus to home Linux system

Archiving & Restoring

Archiving

tar command (on Opus)

Use **wc** to count the number of files in the three directories

```
/home $ cd /home/cis90
```

```
/home/cis90 $ ls
```

answers	casric	fitcon	hormat	lemrob	patcar	rudtro	weljon
beakie	cis	genmar	keljos	matjon	perste	simben	weltim
bin	depot	guest	lefnic	milhom	ramjua	tilbuz	
calmic	fahmic	gutemi	lehreb	mosmic	rodduk	vasjor	

```
/home/cis90 $ find simben bin/ answers depot | wc -l
```

```
568
```

Your home directory has all the files you made during the course.

The bin directory has allscripts, riddles and other files used in class

The answers directory has answers for each lab.

The depot directory has miscellaneous files used throughout the course

Archiving

tar command (on Opus)

verbose

create

Name of tarball to create

directories to backup

```

/home/cis90 $ tar cvf simben/simben90.tar simben/ bin/ answers/ depot/
bin/tally
bin/checkgrades
bin/riddle
bin/check5
< snipped >
tar: simben/newer: Cannot open: Permission denied
< snipped >
tar: simben/simben90.tar: file is the archive; not dumped
< snipped >
depot/scrooge
depot/smb.conf
depot/randomjokes
tar: Error exit delayed from previous errors
/home/cis90 $
  
```

Backup all these files into a single tarball

Archiving

tar command (on Opus)

verbose
table of contents
Name of tarball

```
/home/cis90 $ tar tvf simben/simben90.tar | wc -l  
563  
/home/cis90 $ find bin answers depot simben | wc -l  
568  
/home/cis90 $
```

Note, some files might not have been added to the archive due to permission errors or it was the tarball itself.

These errors were displayed when the tarball was created:

```
tar: simben/simben90.tar: file is the archive; not dumped  
tar: simben/newer: Cannot open: Permission denied  
tar: answers/labx2: Cannot open: Permission denied  
tar: answers/labx1: Cannot open: Permission denied  
tar: answers/test03: Cannot open: Permission denied  
tar: Exiting with failure status due to previous errors
```



Archiving

tar command (on Opus)

Archive everything in your home directory (including all sub directories) plus the class directories into one tarball.

Change "simben" to your home directory!

```
cd /home/cis90
```

```
find simben bin/ answers/ depot/ | wc -l
```

*Count the files to
be archived*

```
tar cvf simben/simben90.tar simben bin/ answers/ depot/
```

```
tar tvf simben/simben90.tar | wc -l
```

*This counts the files
that were archived*

Every CIS 90 student has their own Arwen system



simms-teach.com/docs/cis90/Pod-Assignments-90-sp14.pdf

CIS 90 VLab Assignments	
Student	VM
TBD	P01-Arwen
Anthony	P02-Arwen
Benji	P03-Arwen
Buzz	P04-Arwen
Carlos	P05-Arwen
Cill	P06-Arwen
Cody	P07-Arwen
TBD	P08-Arwen
TBD	P09-Arwen
Duke	P10-Arwen
Eliah	P11-Arwen
Emily	P12-Arwen
Enrique C.	P13-Arwen
Enrique R.	P14-Arwen
Homer	P15-Arwen
Jon M.	P16-Arwen
Jon W.	P17-Arwen
Jordan	P18-Arwen
Joseph	P19-Arwen
Joshua	P20-Arwen
Juan	P21-Arwen
Kiernan	P22-Arwen
Marla	P23-Arwen
Mark	P24-Arwen
Mathew	P25-Arwen
Mike C.	P26-Arwen
Michael F.	P27-Arwen
Mike M.	P28-Arwen
Miles	P29-Arwen
Nicholas L.	P30-Arwen
Nicholas T.	P31-Arwen
Patrick	P32-Arwen
Rebecca	P33-Arwen
Ricardo	P34-Arwen
Robert	P35-Arwen
Ruth	P36-Arwen
Shea	P37-Arwen
Steve	P38-Arwen
Tess	P39-Arwen
Tim	P40-Arwen
Trevor	P41-Arwen
Troy	P42-Arwen
TBD	P43-Arwen
TBD	P44-Arwen
TBD	P45-Arwen
TBD	P46-Arwen
TBD	P47-Arwen
TBD	P48-Arwen
TBD	P49-Arwen
TBD	P50-Arwen
TBD	P51-Arwen

Introducti...docx
Cancelled

Show all downloads...

Restoring

tar command (extracting on home Linux computer)

Login to your Arwen system

```
/home/cis90 $ ssh cis90@P06-Arwen
cis90@p06-arwen's password:
Welcome to Linux Mint 15 Olivia (GNU/Linux 3.8.0-26-generic x86_64)

Welcome to Linux Mint
* Documentation: http://www.linuxmint.com
Last login: Thu Dec  5 15:58:14 2013 from sun-hwa.cis.cabrillo.edu
cis90@p06-arwen:~ >
```

Restoring

tar command (extracting on home Linux computer)

Make a directory to put your Opus files

```
cis90@p06-arwen:~ > mkdir opus-files  
cis90@p06-arwen:~ > cd opus-files  
cis90@p06-arwen:~/opus-files >
```

Retrieve your archive from Opus using scp command

```
cis90@p06-arwen:~/opus-files > scp -P 2220 simben90@oslab.cabrillo.edu:simben90.tar .  
The authenticity of host '[oslab.cabrillo.edu]:2220 ([2607:f380:80f:f425::230]:2220) '  
can't be established.  
RSA key fingerprint is 7d:32:80:b9:52:32:c8:dc:3b:16:0e:ba:8c:fd:79:ef.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '[oslab.cabrillo.edu]:2220' (RSA) to the list of known  
hosts.  
simben90@oslab.cabrillo.edu's password:  
simben90.tar                                100% 1710KB    1.7MB/s    00:00  
cis90@p06-arwen:~/opus-files >
```

Restoring

tar command (extracting on home Linux computer)

```
cis90@p06-arwen:~/opus-files > ls  
simben90.tar
```

```
cis90@p06-arwen:~/opus-files > tar xvf simben90.tar  
simben/  
simben/lab05.graded  
simben/names  
simben/bigshell  
simben/.vim/  
< snipped >  
depot/scrooge  
depot/smb.conf  
depot/randomjokes
```

*Extract the
tarball*

```
cis90@p06-arwen:~/opus-files > ls  
answers bin depot simben simben90.tar
```

*Note the new
directories created*

Restoring

tar command (extracting on home Linux computer)

```
cis90@p06-arwen:~/opus-files > cd simben/bin
cis90@p06-arwen:~/opus-files/simben/bin > myscript
-bash: /home/cis90/bin/myscript: No such file or directory
[127]cis90@p06-arwen:~/opus-files/simben/bin > ./myscript
```

CIS, please Enter an option number from the list below:

- 1) What is today?
- 2) The users on p06-arwen
- 3) Warning, don't go here!!
- 4) Sort current directory
- 5) Back pat eCards
- 6) Check IP forwarding status

or enter Q to Quit

Enter Your Choice:

Note we have a different PATH on this system. The current "." directory is not on our PATH. To run a script that is not on the path add "./" to the front of the pathname of the script.

Archives

gzip and gunzip

Archiving

gzip and gunzip commands (on Opus)

```
/home/cis90/simben $ ls -l simben90.tar  
-rw-rw-r--. 1 simben90 cis90 1751040 Dec 10 07:57 simben90.tar
```

*Next, compress the archive with **gzip***

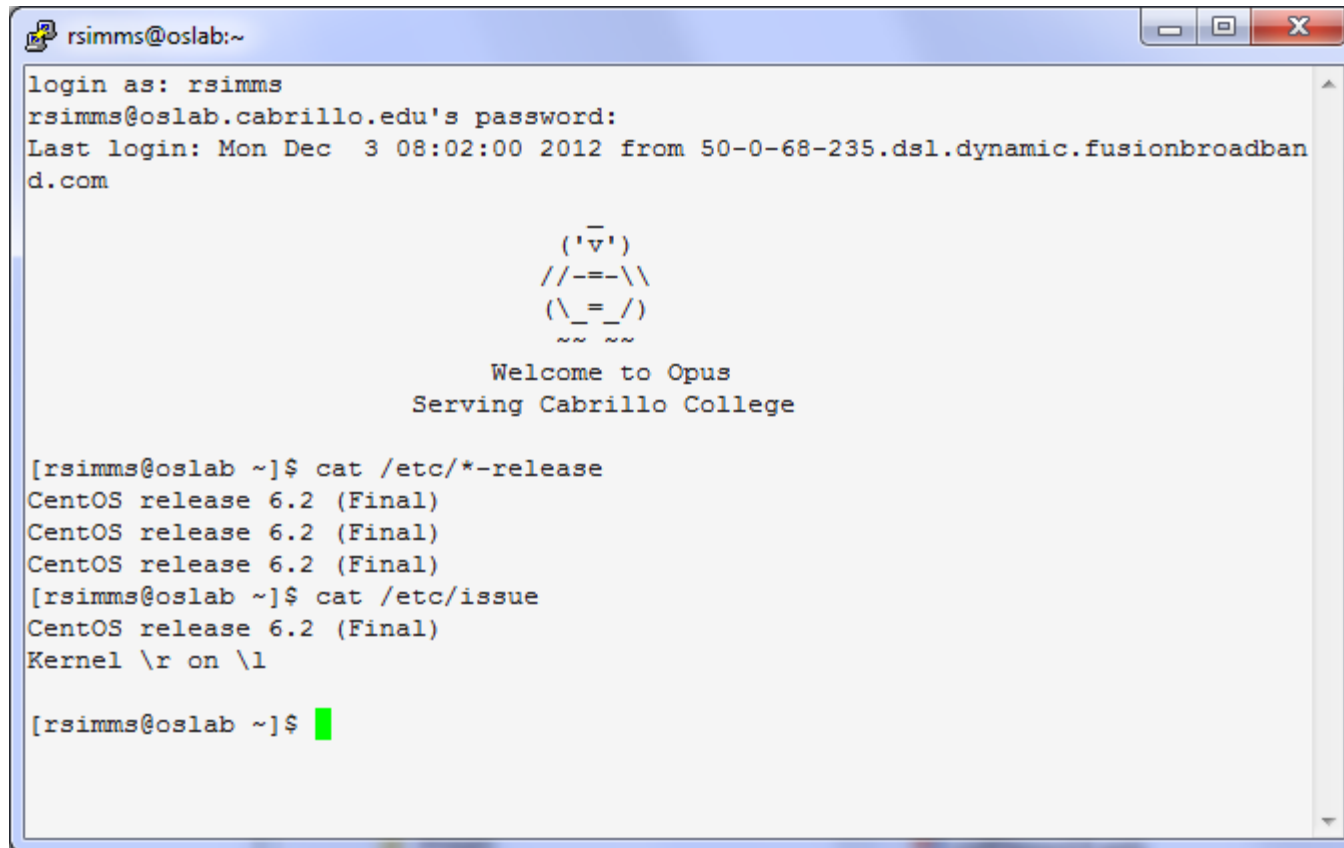
```
/home/cis90/simben $ gzip simben90.tar  
/home/cis90/simben $ ls -l simben90.tar.gz  
-rw-rw-r--. 1 simben90 cis90 440895 Dec 10 07:57 simben90.tar.gz
```

*Later, uncompress the archive with **gunzip***

```
/home/cis90/simben $ gunzip simben90.tar.gz  
/home/cis90/simben $ ls -l simben90.tar  
-rw-rw-r--. 1 simben90 cis90 1751040 Dec 10 07:57 simben90.tar
```

*Note: **gzip** renames the tarball by adding the **.gz** suffix and **gunzip** removes the suffix*

Make your own Opus at home



```
rsimms@oslab:~  
login as: rsimms  
rsimms@oslab.cabrillo.edu's password:  
Last login: Mon Dec  3 08:02:00 2012 from 50-0-68-235.dsl.dynamic.fusionbroadband.com  
  
      _  
    ('v')  
  //--=\ \  
  (\_=_/ )  
    ~ ~ ~  
Welcome to Opus  
Serving Cabrillo College  
  
[rsimms@oslab ~]$ cat /etc/*-release  
CentOS release 6.2 (Final)  
CentOS release 6.2 (Final)  
CentOS release 6.2 (Final)  
[rsimms@oslab ~]$ cat /etc/issue  
CentOS release 6.2 (Final)  
Kernel \r on \l  
  
[rsimms@oslab ~]$
```

Opus is a CentOS 6.2 Linux system

Ingredients

To make your own Opus at home you will need to purchase the following to add to your home computer:

- A CentOS Linux distribution ... price: \$0.00
- Virtualization software
 - For Windows
 - VirtualBox ... price: \$0.00
 - *or* VMware Workstation ... price: \$0.00 (via VMware Academy)
 - For Mac
 - VirtualBox ... price: \$0.00
 - *or* VMware Fusion ... price: \$0.00 (via VMware Academy)

← → ↺ simms-teach.com/resources.php 🔍 ☆ 🌐 ☰



Rich's Cabrillo College CIS Classes Resources

[Home](#)
[Resources](#)
[Forums](#)
[CIS Lab](#)
[Blackboard](#)

[Login](#)
[Flashcards](#)
[Admin](#)

[CIS 90](#)
[Previous Classes](#)

11 days till term ends!

[Cabrillo College](#)
[Web Advisor](#)
[Commands and Files](#)

[VLab RDP file](#)

[CIS 90 VLab VM Assignments](#)

[RIP Dennis Ritchie](#)

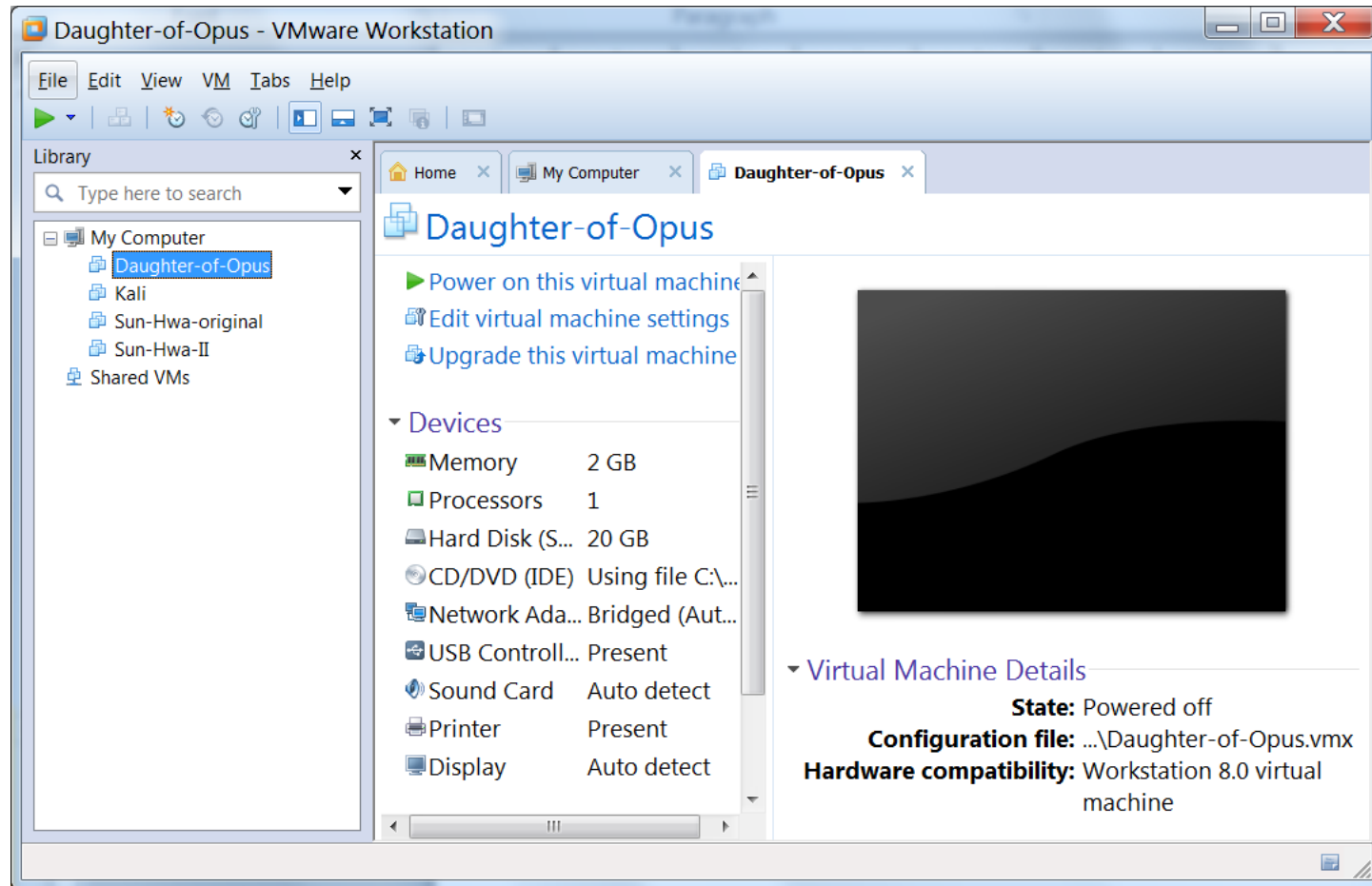
Opus Status: UP

Links

Instructors Linux Master Jim Programming Master Ed Network Master Gerlinde Network Master Rick Web Master John Systems Master Michael Clubs GNU Linux Users Group Departments CNSA CIS CS Crib Sheets Ollie Wright (CIS 90) Documentation TLDP LINFO UNIX Rosetta Stone Animations	Getting Linux/UNIX Linux ISOs Kernels RPMs (rpmfind) RPMs (pbone) OpenSolaris Tools and Software Apache Bastille CoRD cygwin DOS boot disks Dynamips/Dynagen John the Ripper Netfilter Putty SSH Tools Quagga routing suite Tripwire Wireshark e-academy sites for CIS students MSDN Academic Alliance VMware e-academy Virtualization VirtualBox VMware ESXi and vSphere client Standards IETF (RFCs) IEEE	Commands Practical Summary Useful vi summary vi cheat sheet Howtos HowtoForge email DNS Ethernet (NIC drivers) NFS NIS PPP Putty SSH Keys sed Student Howtos Monitor Script by Sean Callahan WiFi Penetration by Ryan Schell Logging into Opus from a Mac by Laura Sreckovic LDAP Implementation by Tim Childers Install and DualBoot into Microsoft Windows 7 and Linux Ubuntu by Richie Fou Making an ethernet cable by Michael George Home VM access via Linksys router by Marc Romansky Putty to VMs by Marc Romansky
---	--	---

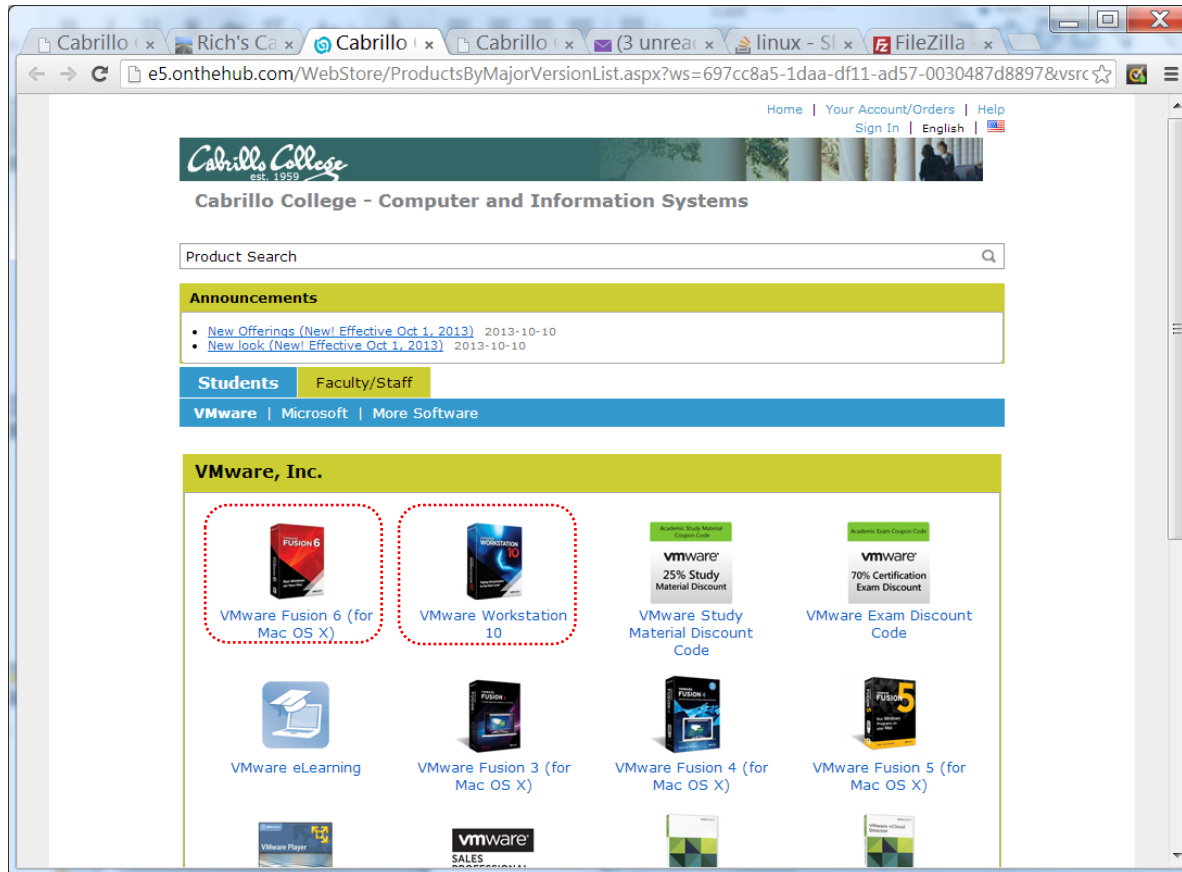
Shopping for the ingredients

VMware Workstation

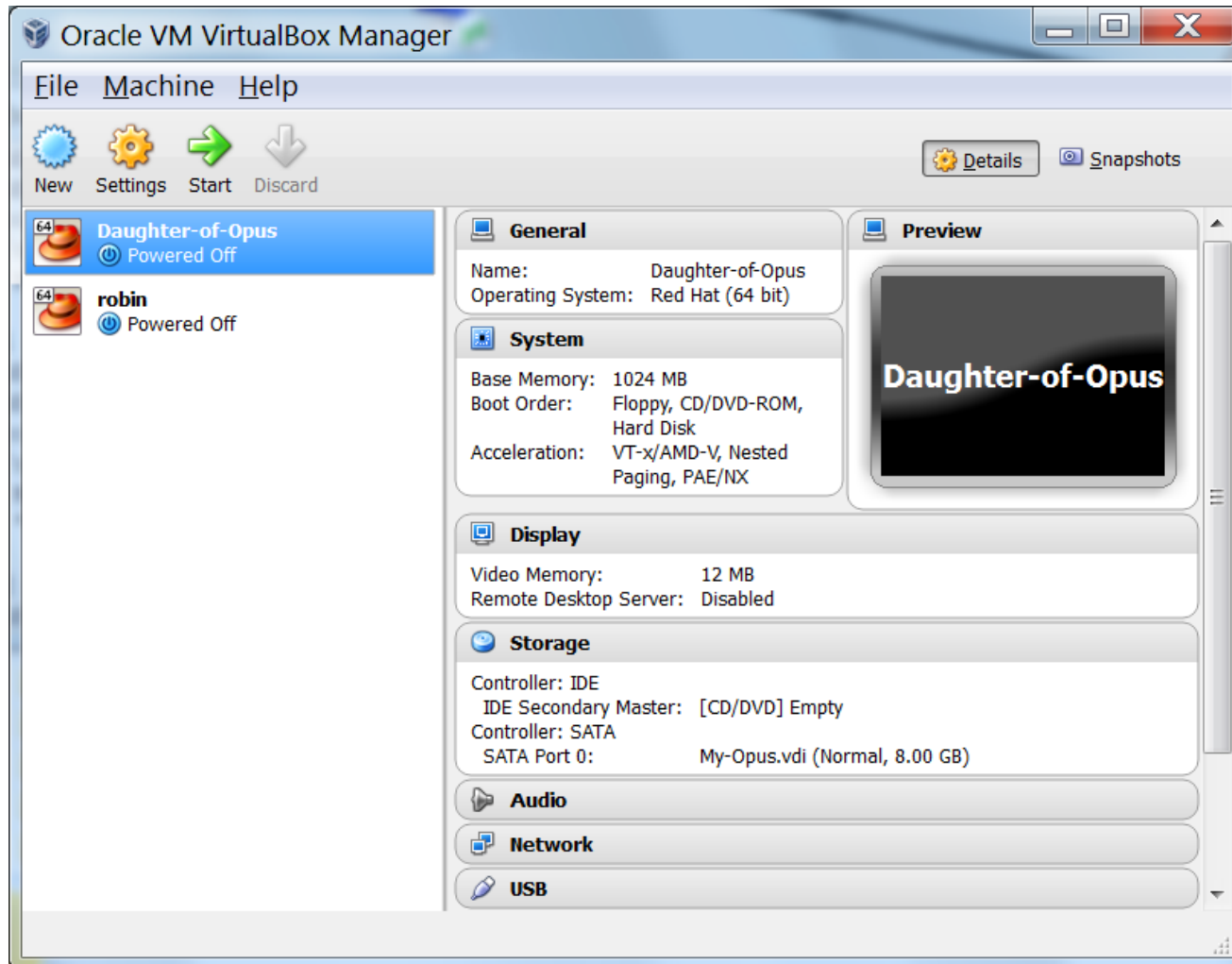


Provides you with an empty (No OS) virtual computer

VMware Workstation (Windows) or Fusion (Mac)



Oracle VirtualBox



Provides you with an empty (No OS) virtual computer

virtualbox.org



<http://iso.linuxquestions.org/>

The screenshot shows the LinuxQuestions.org website. At the top, there's a navigation bar with the site logo and a search bar. Below the navigation bar, there's a banner for Rackspace. The main content area is titled "LinuxQuestions.org > ISOs". It features a "Welcome to LQ ISOs" section with a "Linux Download" link. Below this, there's a "15 Latest Linux Distribution Releases" list and a "Popular Linux Distributions" list. The "15 Latest Linux Distribution Releases" list includes: 1. SparkyLinux 3.2 "LXDE", "Ultra", "Razor-qt", 2. PCLinuxOS 2013.12, 3. DoudouLinux 2.1, 4. ROSA 2012 R2 "Desktop Fresh", 5. Canaima GNU/Linux 4.0, 6. Oracle Linux 6.5, 7. CentOS 6.5, 8. Tiny Core Linux 5.1, 9. Linux Mint 16, 10. Peppermint OS Four-20131113, 11. Centrych 12.04.3, 12. Linux Deepin 2013, 13. MakuluLinux 4.3, 14. Manjaro Linux 0.8.8, 15. NetSecL OS 5.0. The "Popular Linux Distributions" list includes: Ubuntu, Fedora, Linux Mint, openSUSE, PCLinuxOS, Debian, Mageia, Slackware, CentOS, Puppy, Arch, and MEPIS. There's also a "15 Most Downloaded Distribution Versions (last 30 Days)" list and a "15 Most Downloaded Distributions (Ever)" list. The right sidebar contains a "Main Menu" with links to Linux Forums, Android Forum, Chrome OS Forum, Linux HCL, Linux Tutorials, Linux Wiki, and Distro Reviews. At the bottom right, there's an advertisement for Google Nexus 7.

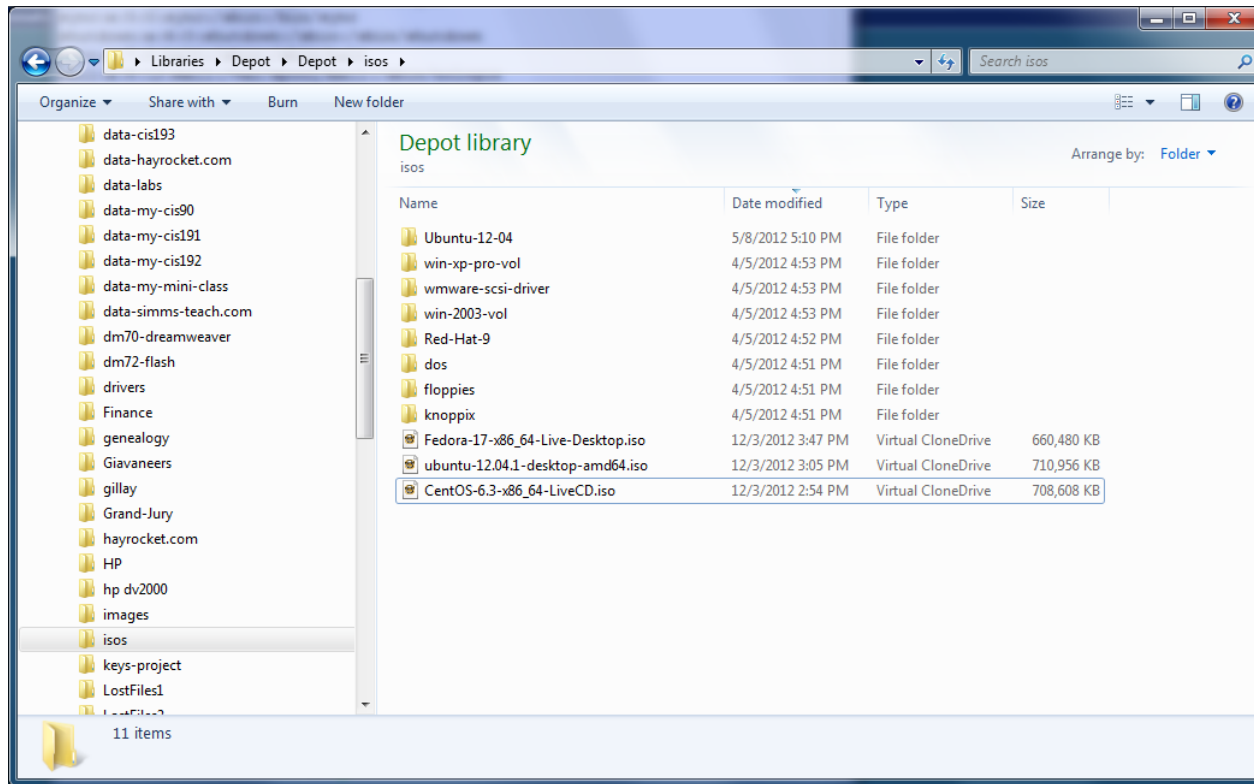
*You will need a
Linux Distro to
install on your
virtual
Computer*

centos.org

The left screenshot shows the main CentOS website. The header includes the CentOS logo and the text "The Community Enterprise Operating System". Navigation links include Home, Donate, Information, Support, Wiki, Downloads, Contact Us, Search, and Register. The main content area features a "CentOS Overview" section with text about its origin and development, and a "CentOS 6 Releases" section dated July 9th 2012.

The right screenshot shows a mirror site, "mirrors.sonic.net/centos/". It displays a table of CentOS releases with columns for Name, Last modified, Size, and Description. The table lists various releases from 2.1 to 6.0, along with their respective download links and sizes.

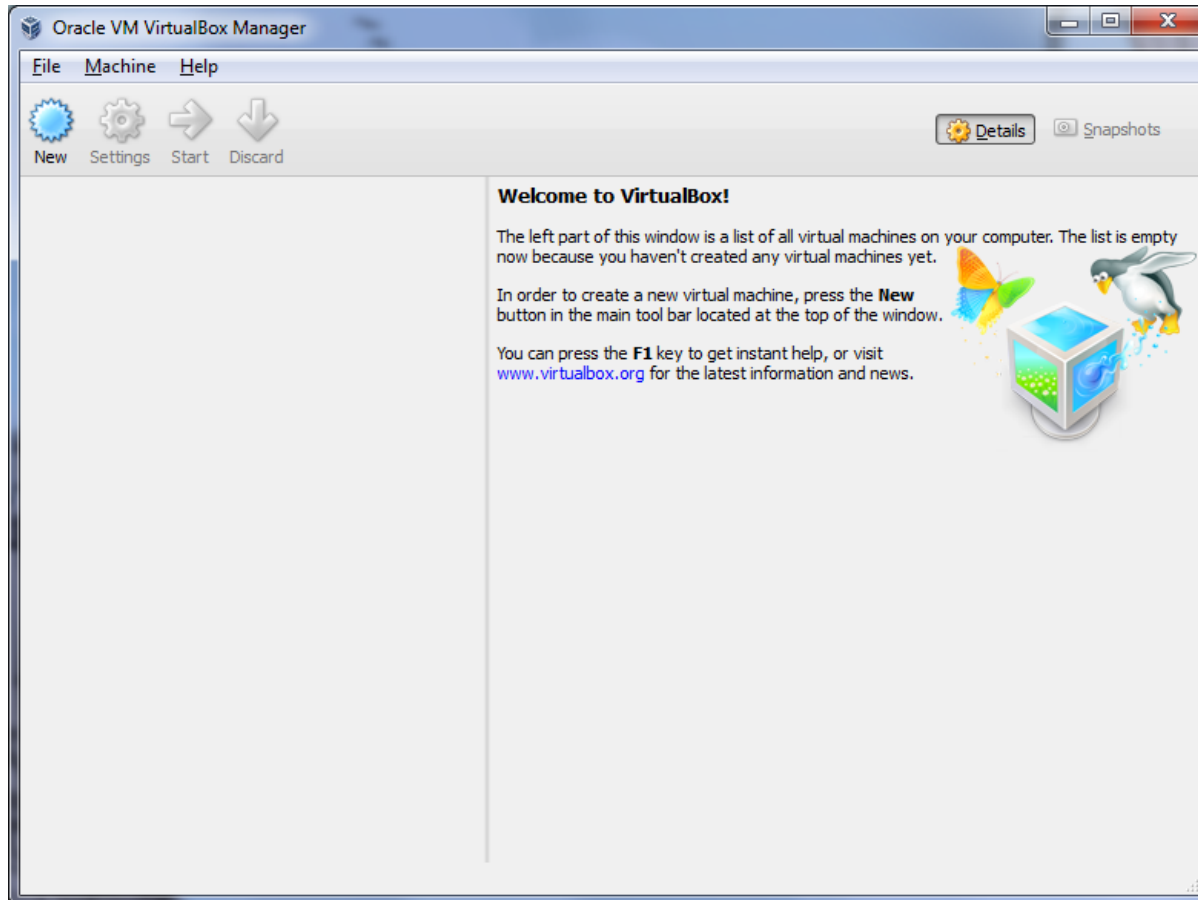
*Use the CentOS Distro to make
your own Opus*



Download an iso image of the Linux distribution

VirtualBox

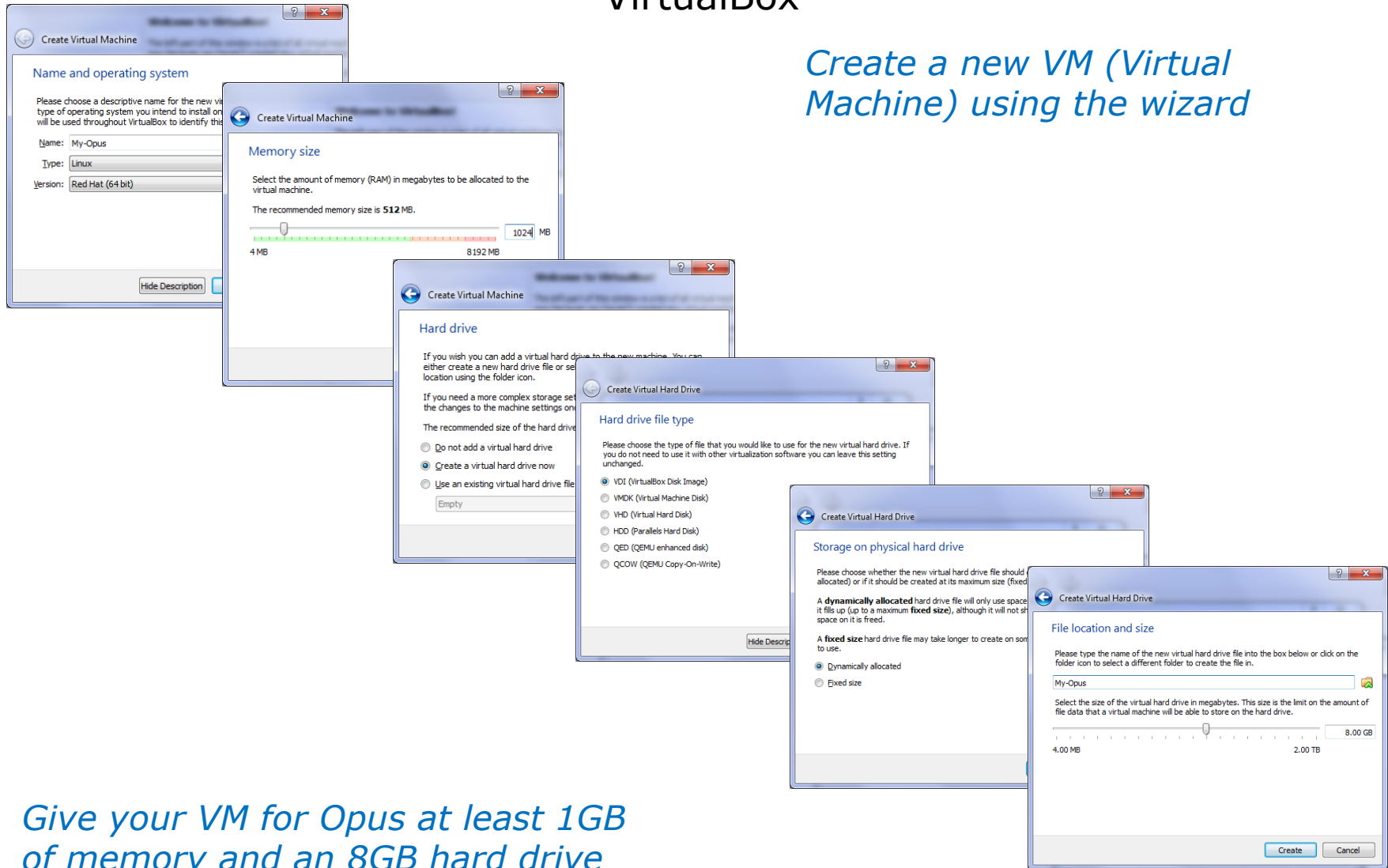
*Click the
New button
to create a
new VM.*



*Download and install one of the virtualization products.
This example will use VirtualBox.*

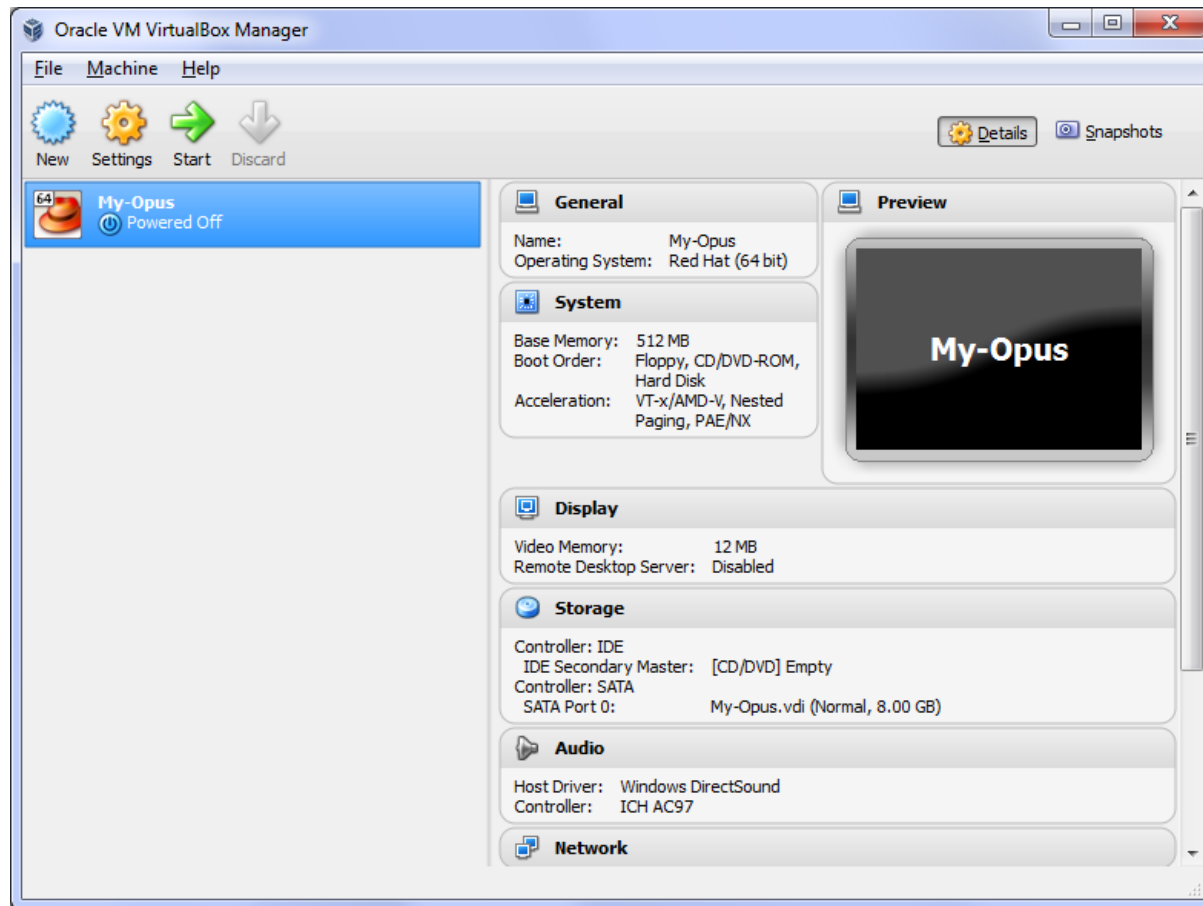
VirtualBox

Create a new VM (Virtual Machine) using the wizard



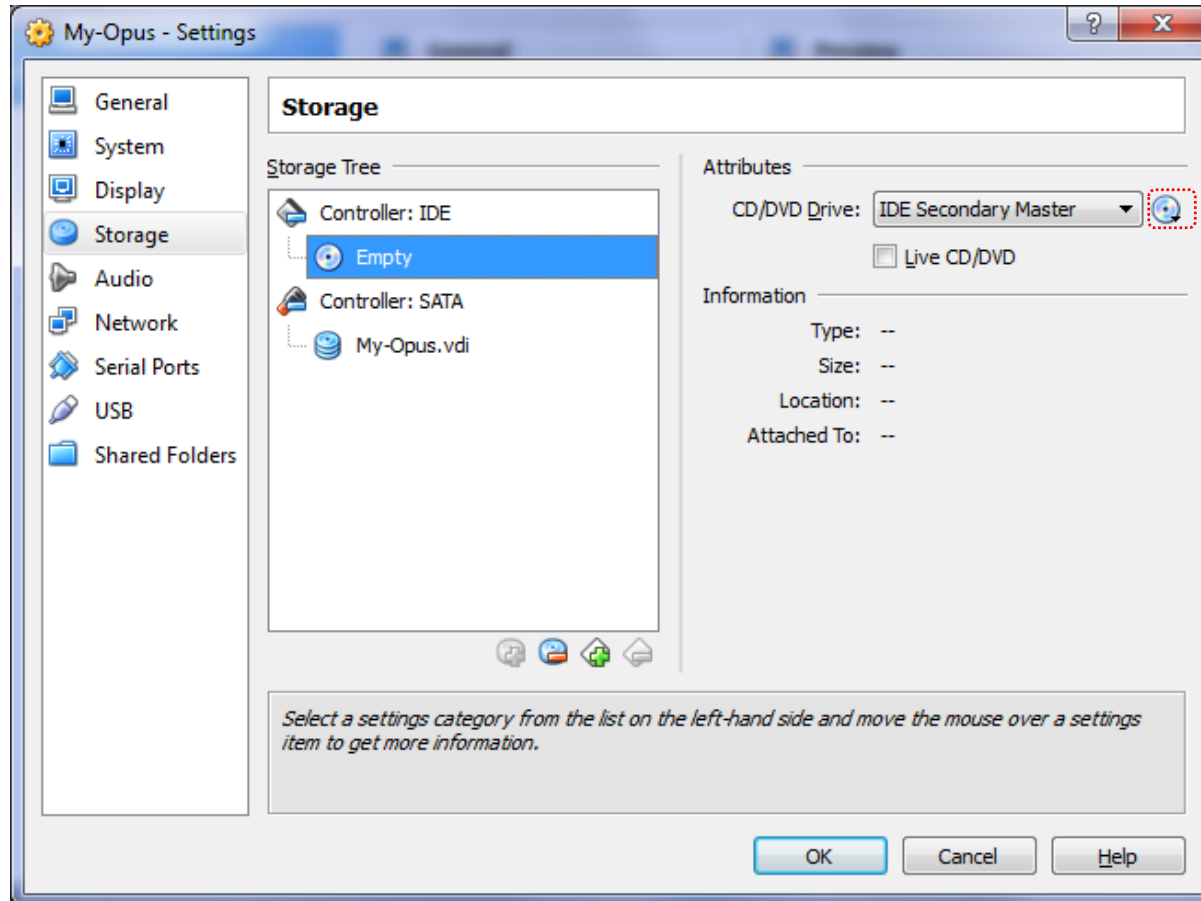
Give your VM for Opus at least 1GB of memory and an 8GB hard drive

VirtualBox



The new VM has no operating system

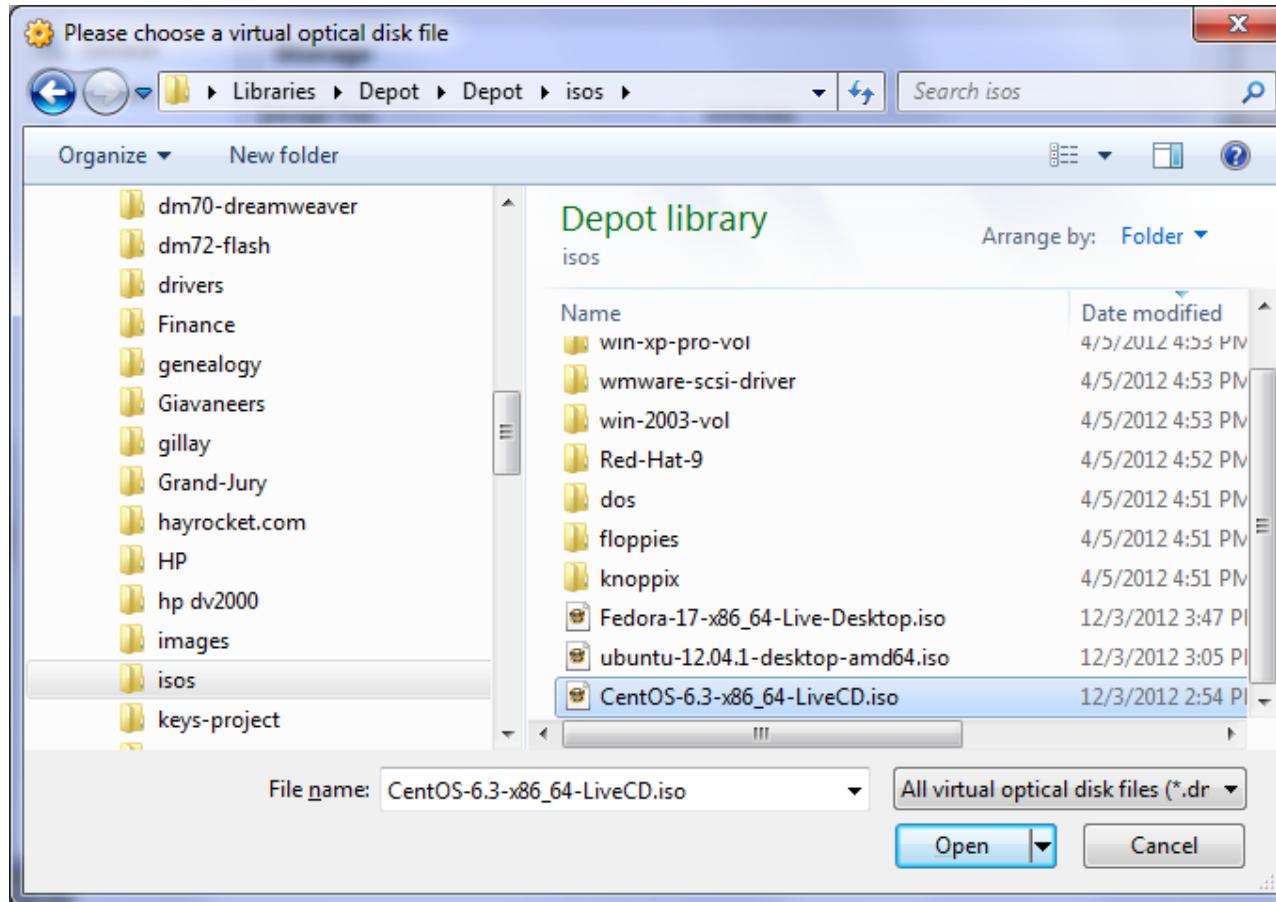
VirtualBox



Click the little CD icon to the left to browse to the CentOS ISO image to install

In Settings locate Storage so we can "put the CentOS CD into the DVD drive" by configuring the virtual IDE DVD drive with the ISO image downloaded earlier.

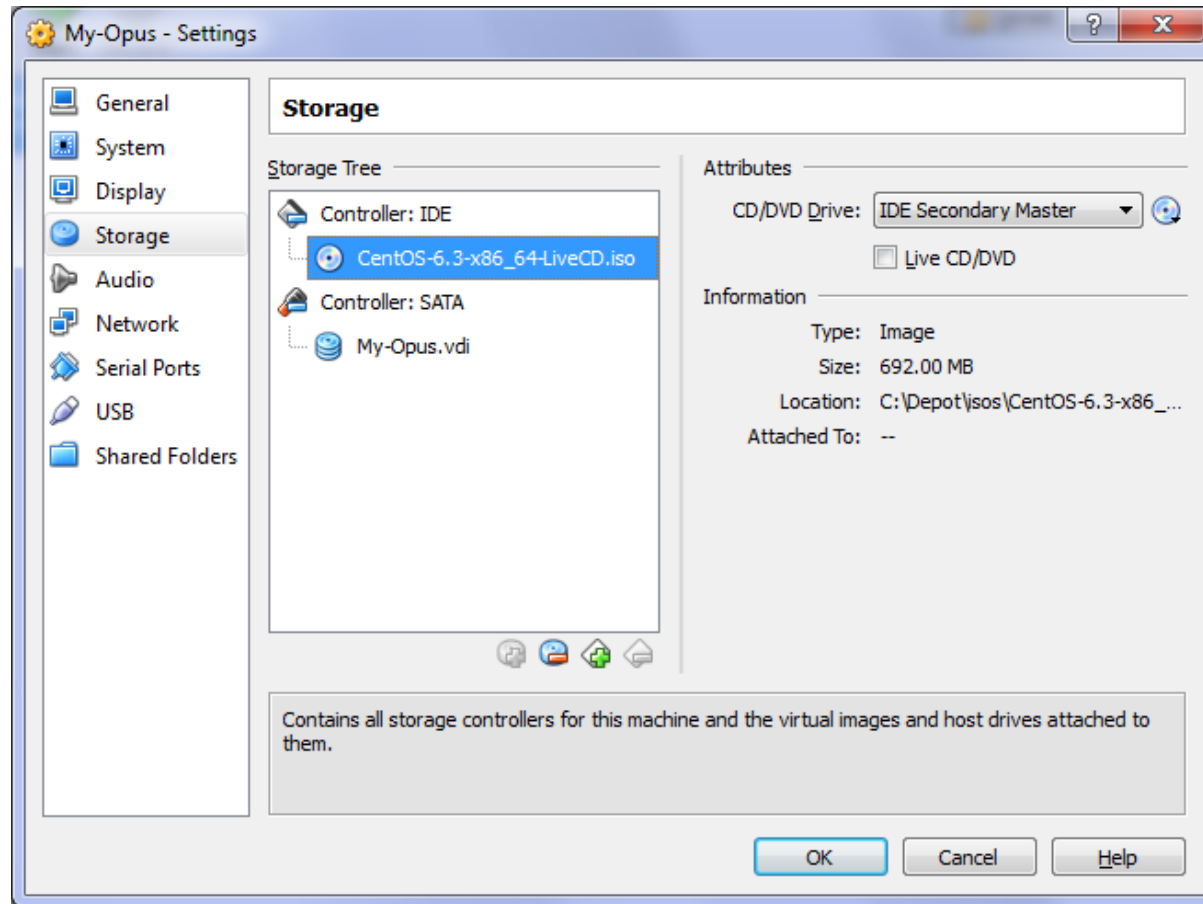
VirtualBox



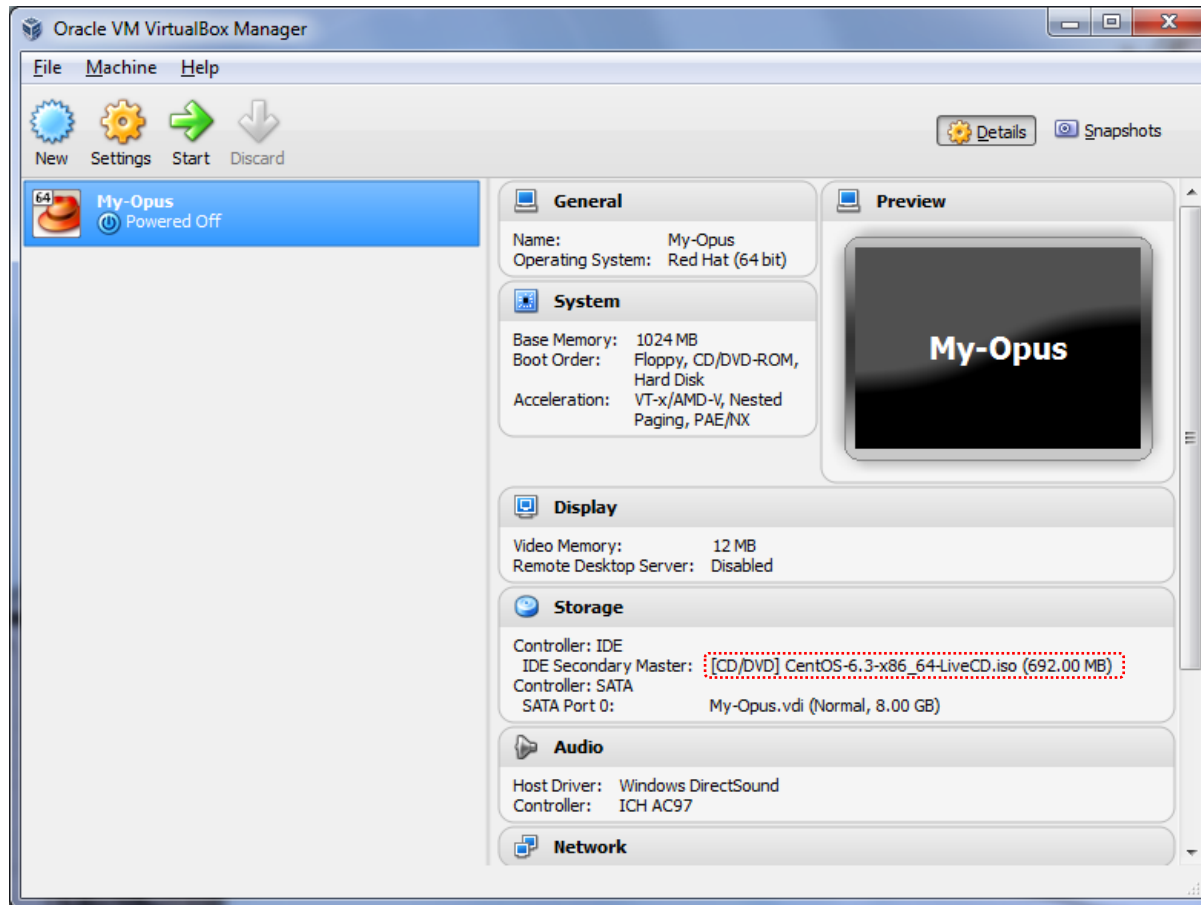
*Locate the
ISO image
to install*

CentOS-6.3-x86_64-LiveCD.iso

VirtualBox

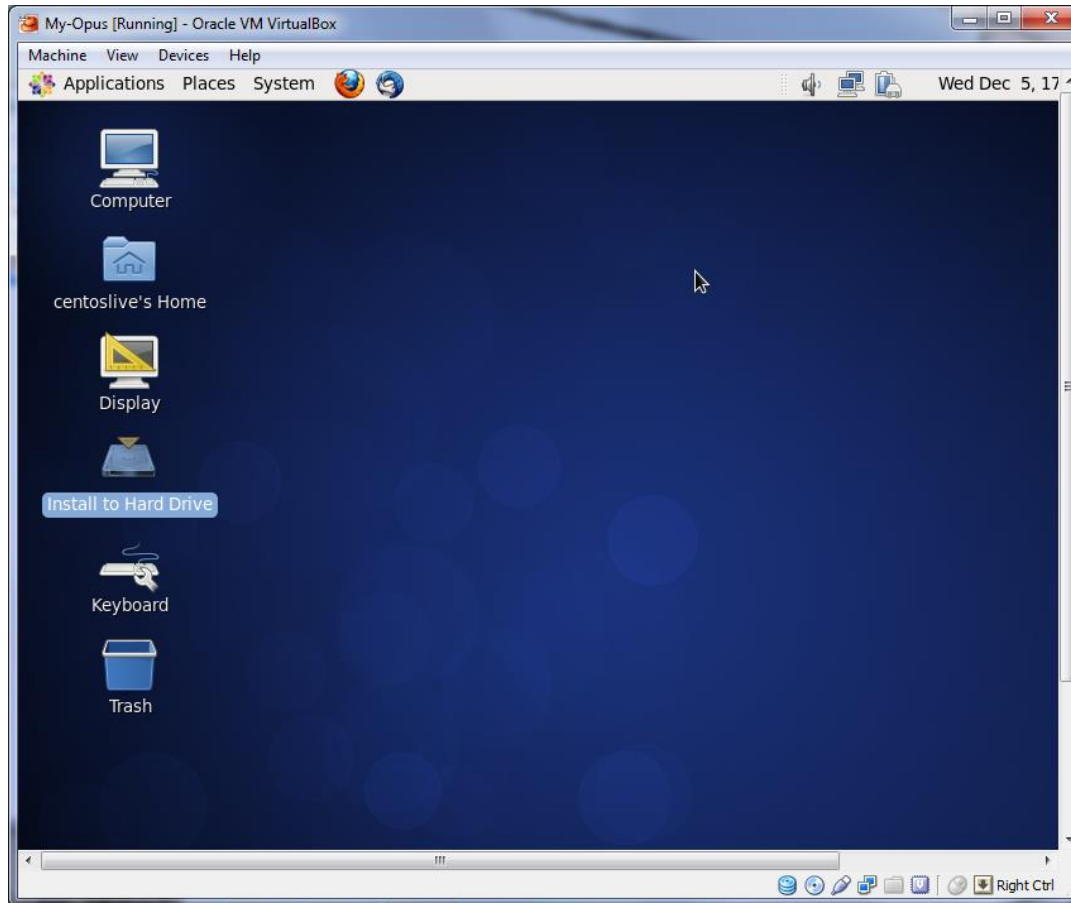


VirtualBox



If you see the correct ISO image in the drive you can power on the VM

VirtualBox



If it complains you don't have a 64-bit CPU (and you do have a 64-bit CPU) then enable Virtualization Technology in your BIOS.

Otherwise just let it boot up using the live image which runs in memory and is not installed to the hard drive.

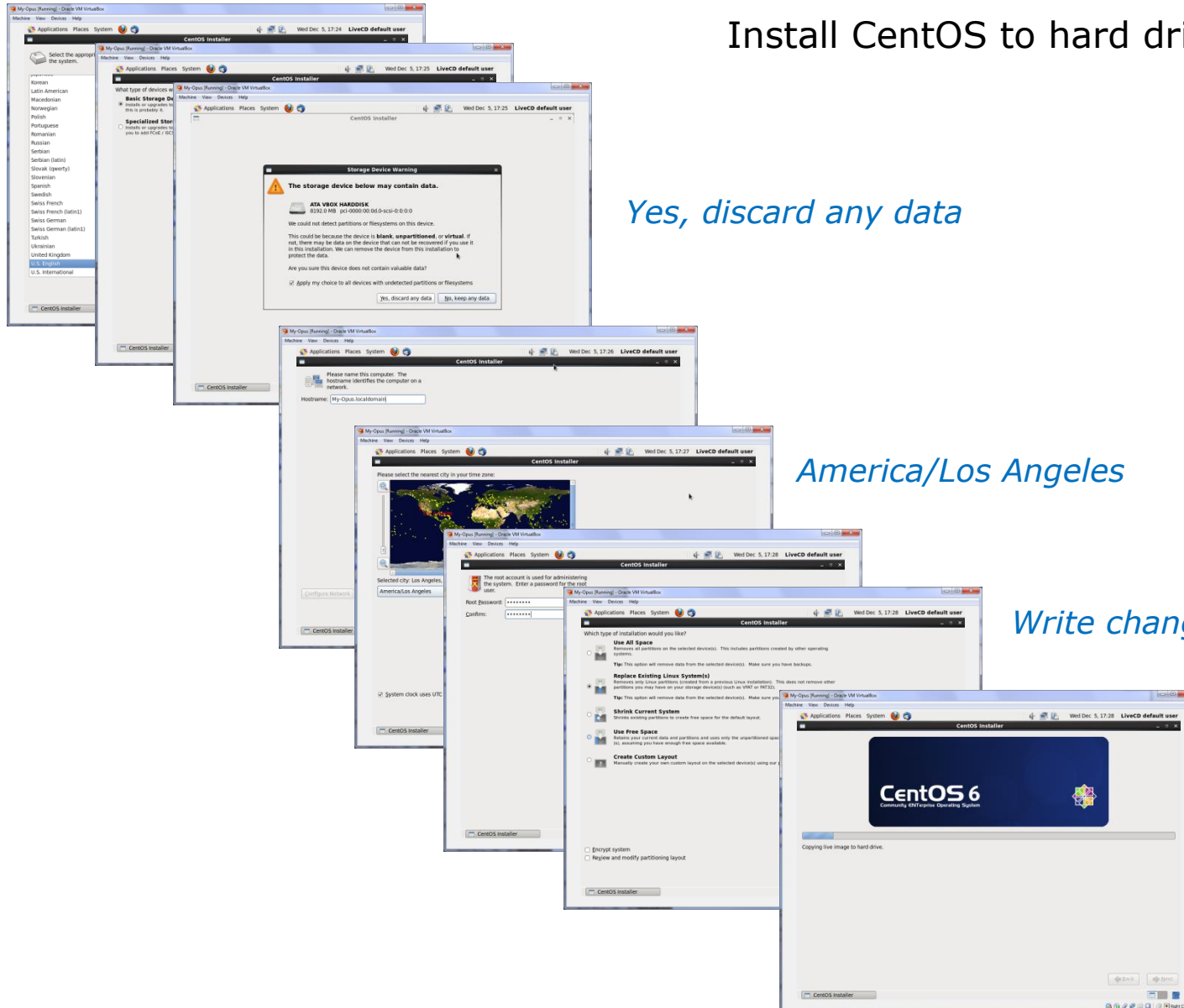
To install permanently to the VM hard drive open the "Install to Hard Drive" icon on the desktop

VirtualBox



Keep hitting the Next button to let the wizard install the CentOS Linux distribution

Install CentOS to hard drive

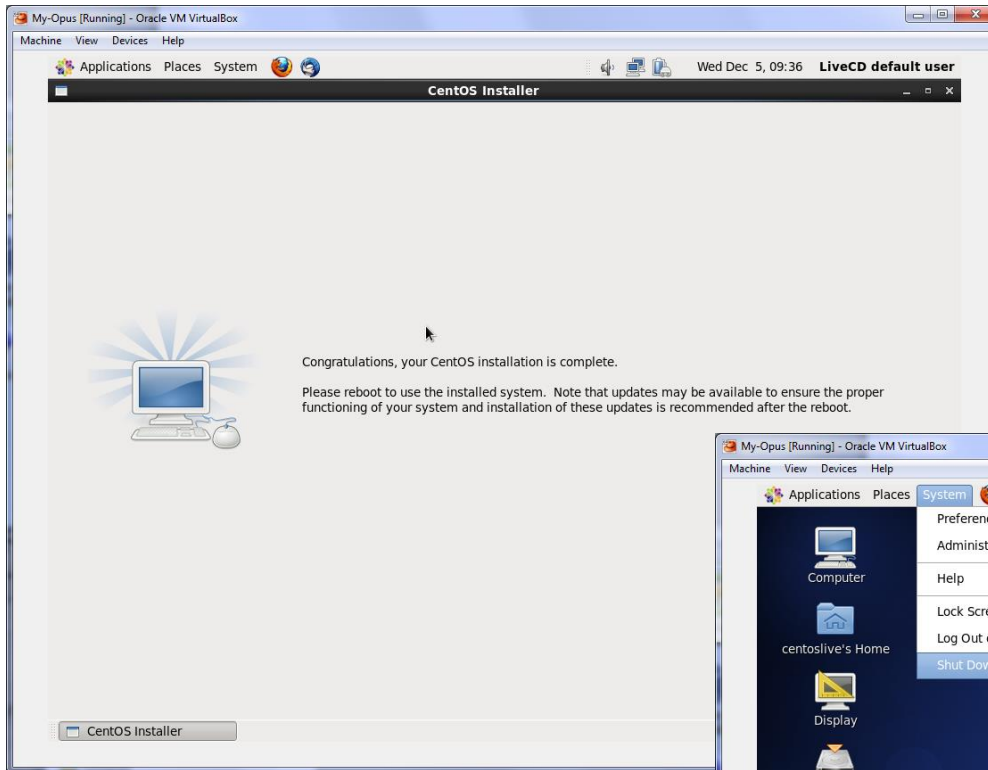


Yes, discard any data

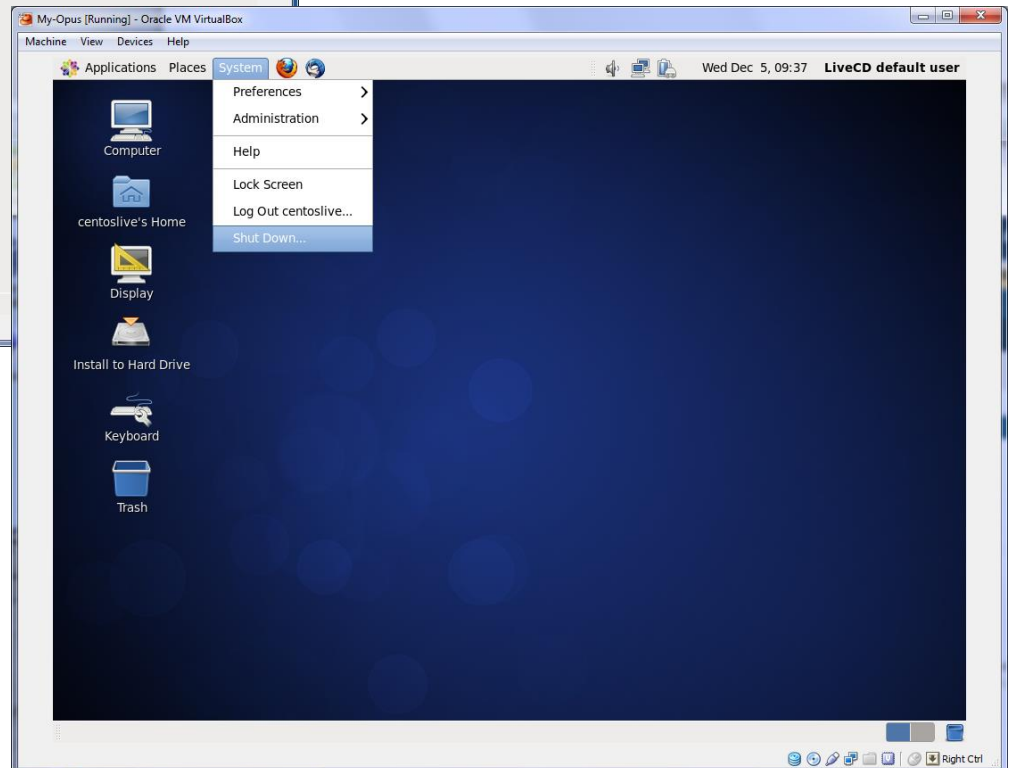
America/Los Angeles

Write changes to disk

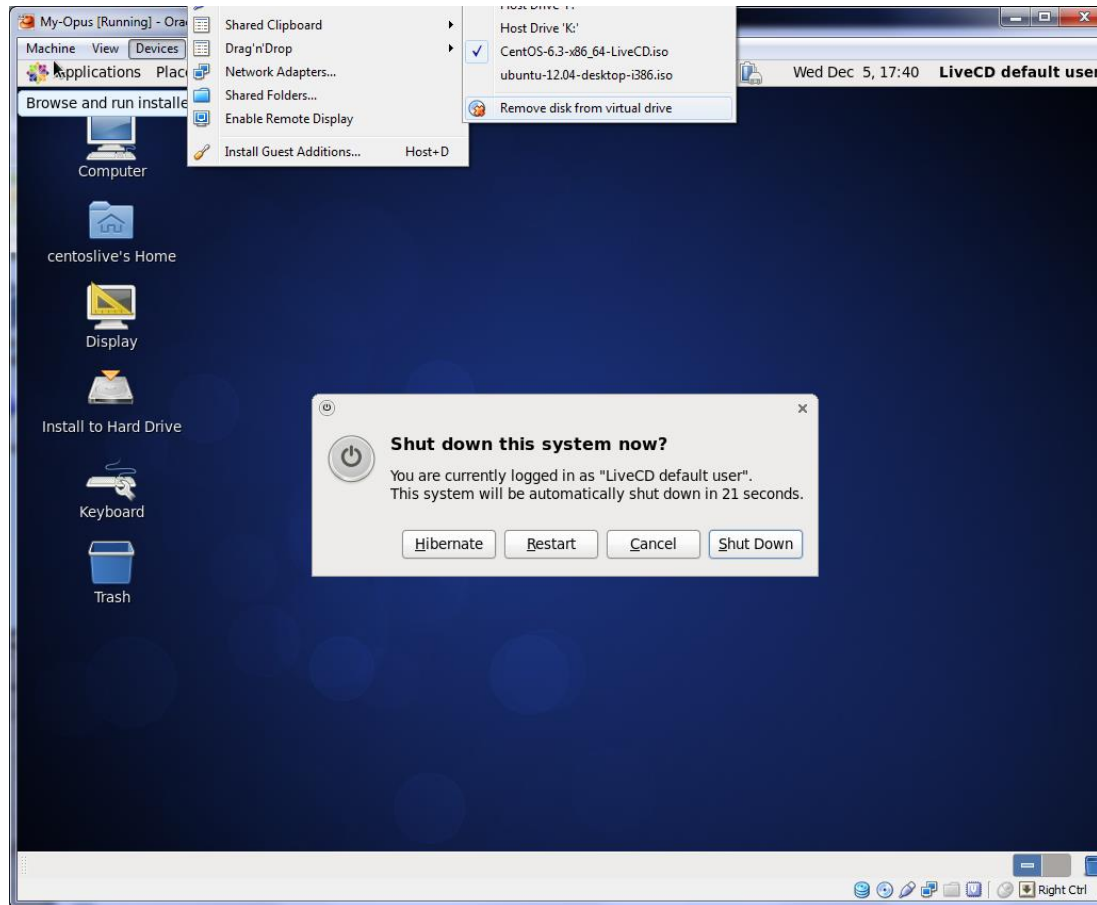
VirtualBox



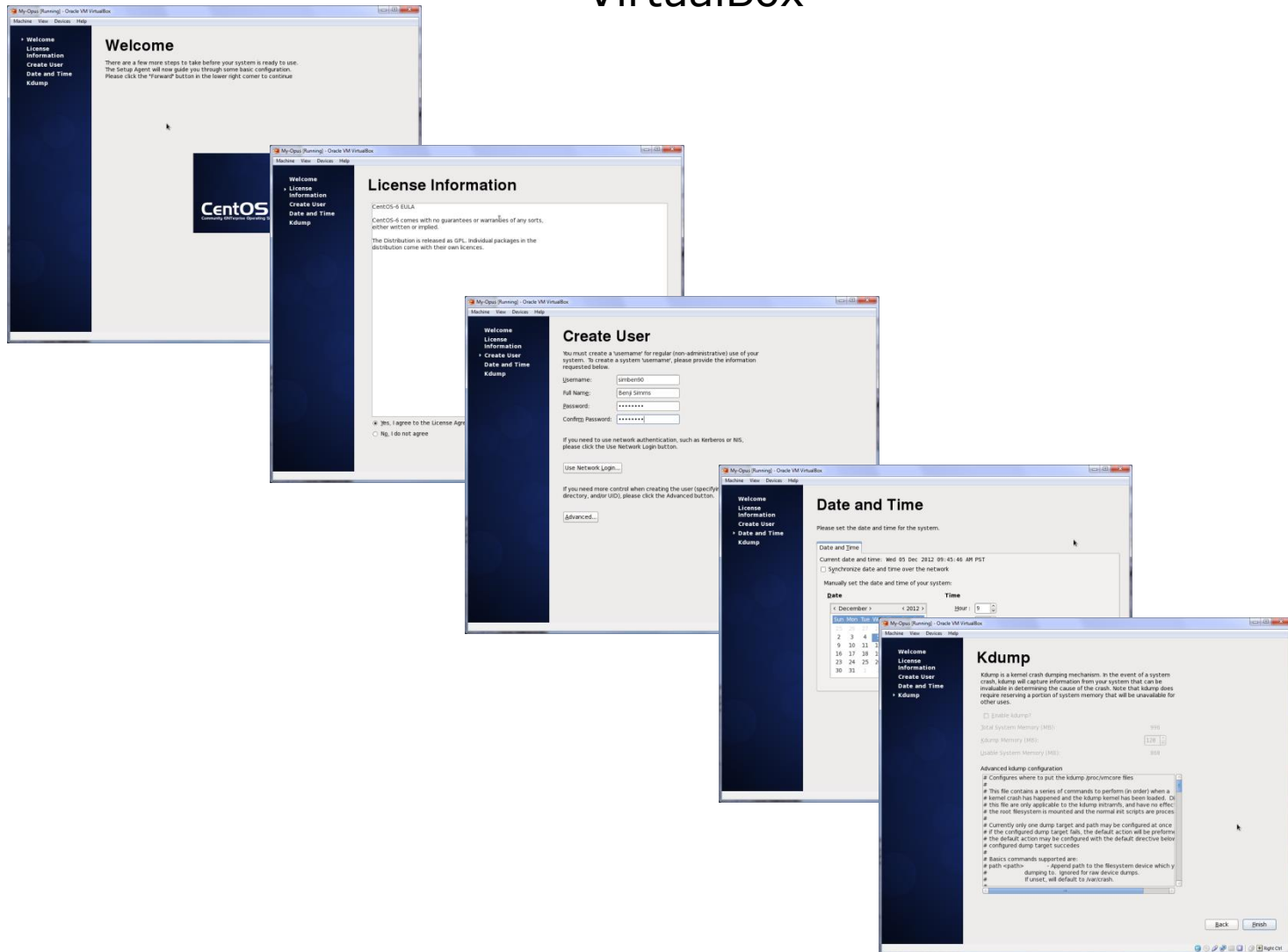
*Shutdown the system and
before starting again
remove the CD from the
drive (Settings > Storage)*



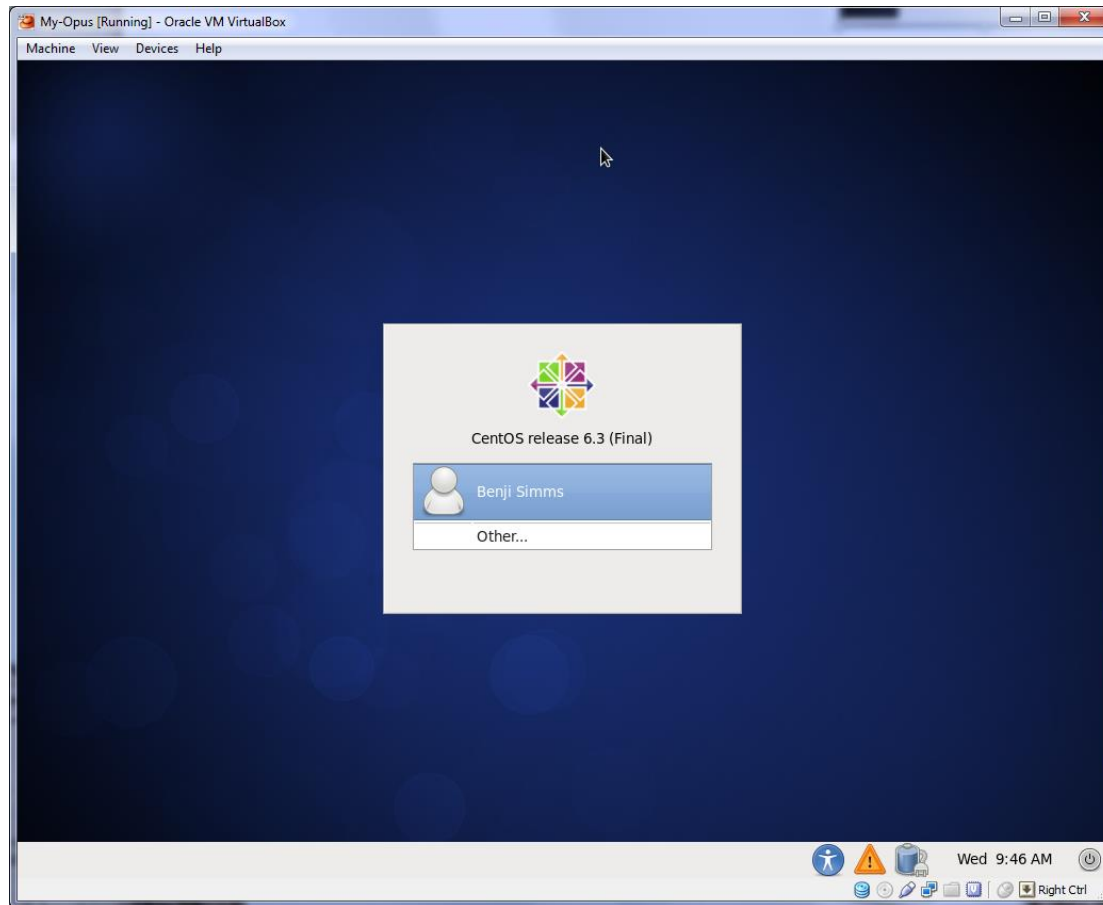
VirtualBox



VirtualBox



Voilà



If you like doing this you will love CIS 191!



Project Presentations



To demo your project and earn five points:

Join CCC Confer and share desktop when it is your turn

- Remote users should dial or Skype to 888-450-4821 and use passcode: 761867
- Classroom students can use Station #5 next to the Polycom

Five minutes max please!

CCC Confer - Attending class online

The screenshot displays the CCC Confer application window titled "CCC Confer - 0 - RICH SIMMS". The interface includes a menu bar (File, Edit, View, Tools, Window, Help) and a toolbar with icons for drawing, erasing, and navigating. The main content area shows a presentation slide titled "CIS Linux Classes" with the Cabrillo College logo and instructor information: "Instructor: Rich Simms" and "Dial-in: 888-450-4821". The slide background features a grid of 40 white silhouette icons on a green field. Two callout boxes provide instructions: one points to a row of four icons (smiley face, hand, gesture, checkmark) in the PARTICIPANTS list, stating "Raise your hand, make gestures, use emoticons and indicate responses using these controls"; the other points to the CHAT area, stating "Ask public or private questions using the chat area". The left sidebar contains three sections: "AUDIO & VIDEO" with a video feed of Rich Simms and controls for Talk, Video, and a search icon; "PARTICIPANTS" listing Benji, Rich Simms (Moderator), and Benji (You); and "CHAT" showing a log of join events.

CCC Confer - 0 - RICH SIMMS

File Edit View Tools Window Help

AUDIO & VIDEO

Rich Simms

Talk Video

PARTICIPANTS

Benji

MAIN ROOM (2)

Rich Simms
Moderator

Benji
(You)

CHAT

- You joined the Main Room. (2:23 PM) -

- Rich Simms joined the Main Room. (2:24 PM) -

Slide1

Cabrillo College
est. 1959

CIS Linux Classes

Instructor: Rich Simms
Dial-in: 888-450-4821

Raise your hand, make gestures,
use emoticons and indicate
responses using these controls

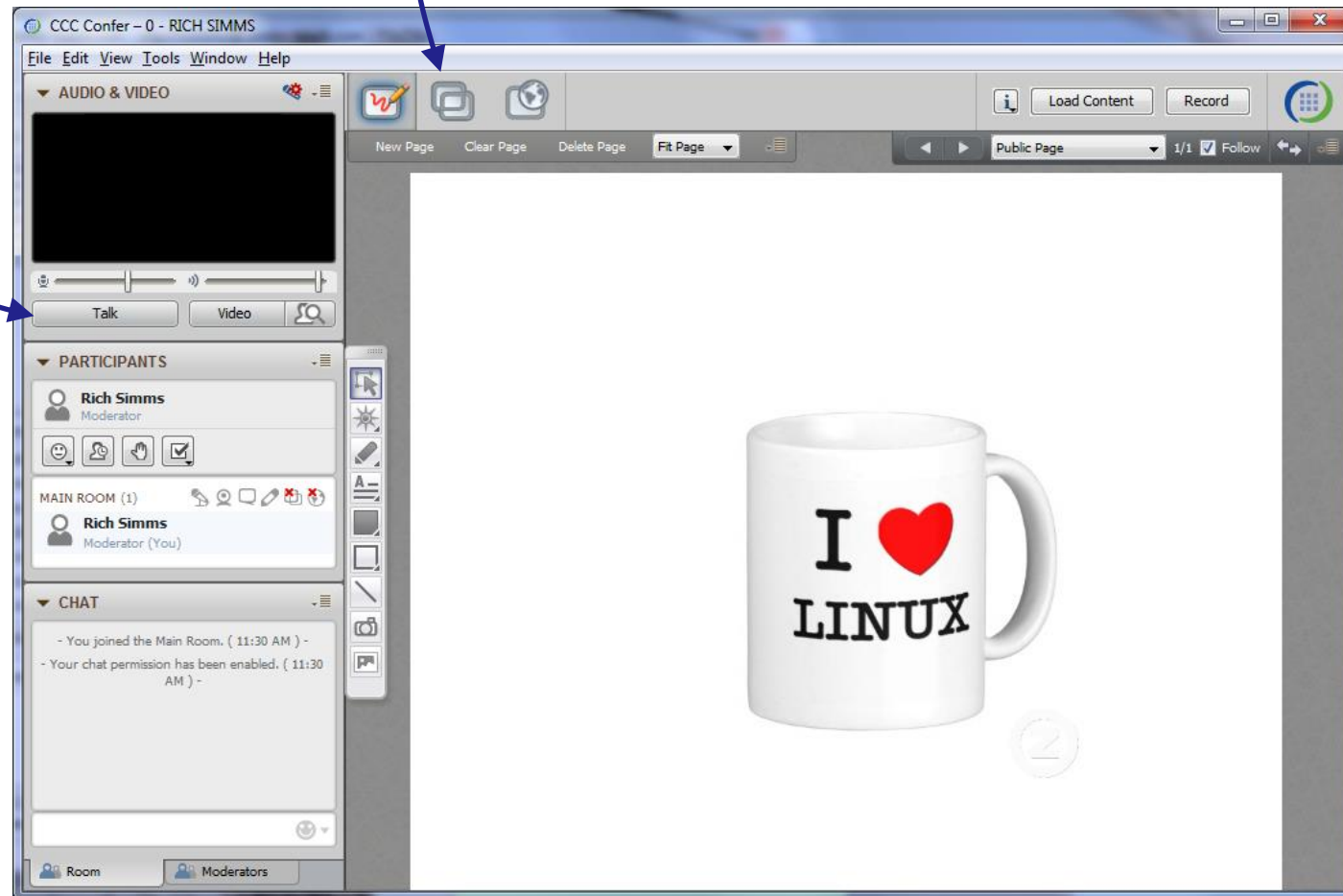
Ask public or private
questions using the chat area

94

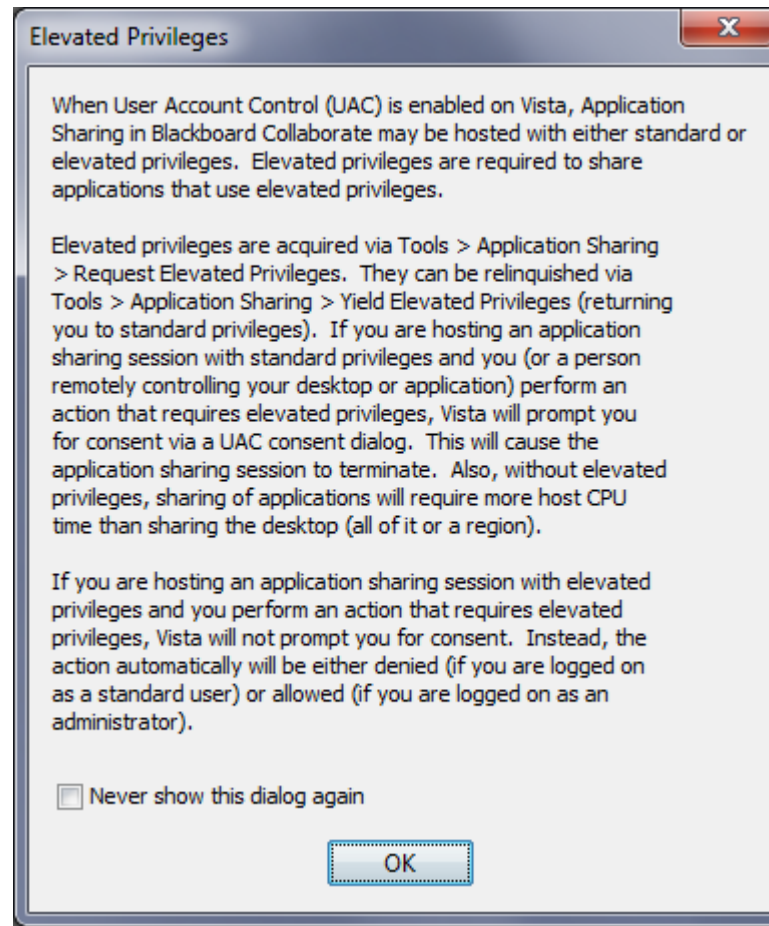
Sharing from CCC Confer

Click **Talk** so we can hear you from your computer's microphone

Click **overlapping rectangles** to share

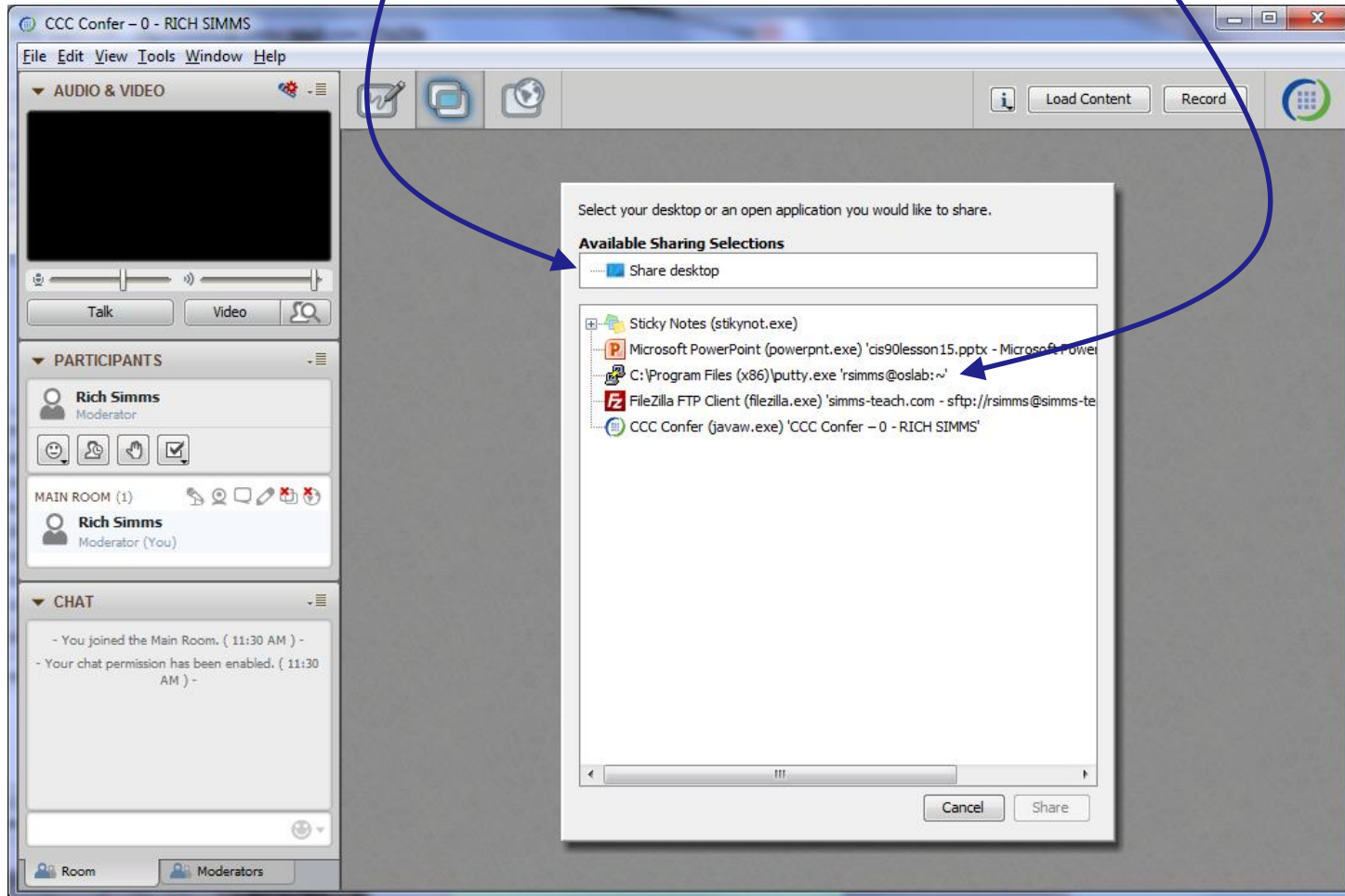


Sharing from CCC Confer



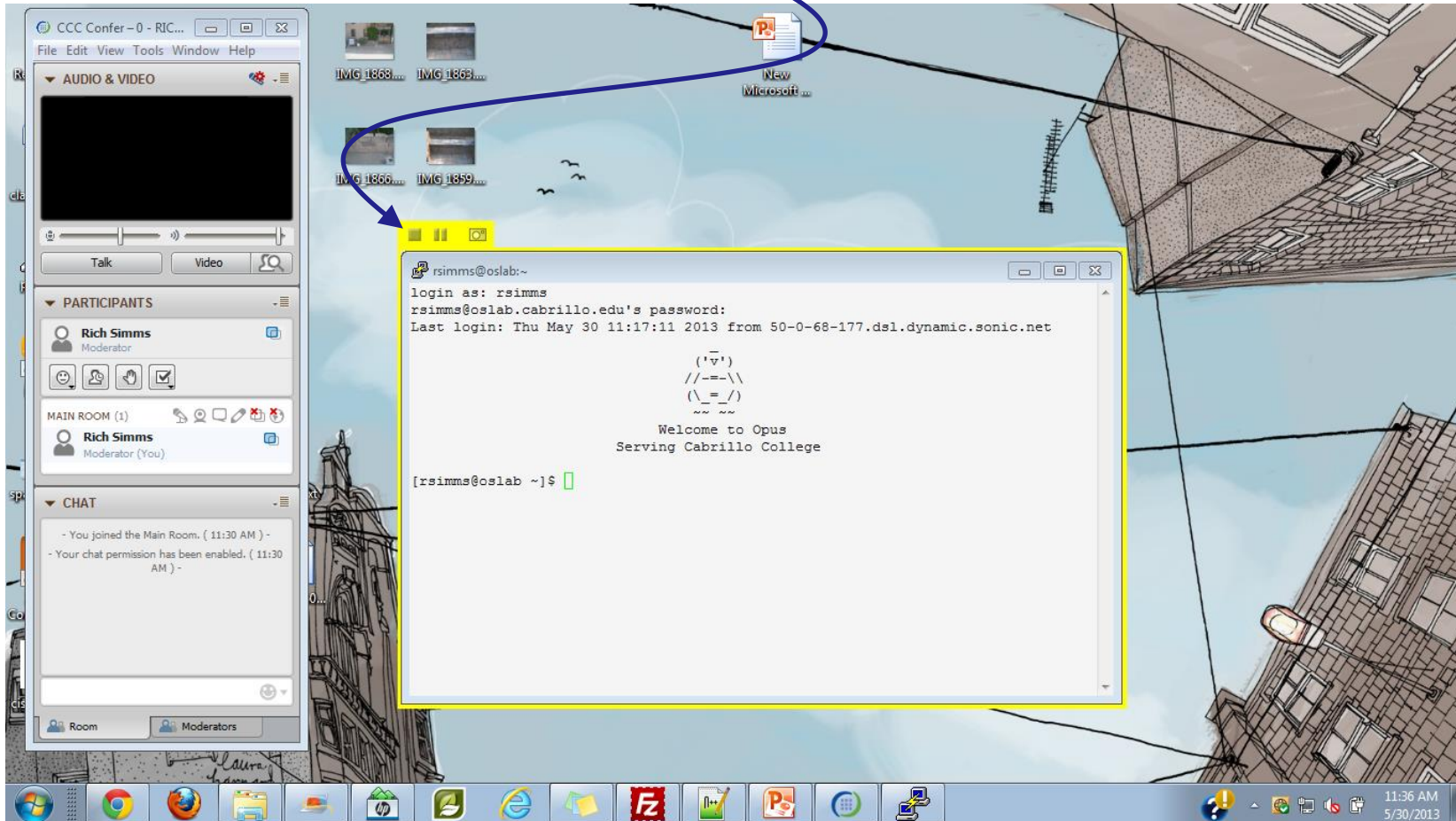
Sharing from CCC Confer

Either share putty/terminal or entire desktop



Sharing from CCC Confer

Click stop symbol to end sharing



Wrap up

New commands:
tar

Backup and restore files

New Files and Directories:

Next Class is the Final Exam

Test #3

Five Posts

Lab X1 (extra credit)

Lab X2 (extra credit)

Backup

File Transfer

Downloading your Opus files to Linux or Mac using scp

More examples of using scp on your local Mac or Linux system:

scp -P2220 -r simben90@oslab.cabrillo.edu:* .

Recursive copy of remote home directory to current local directory (doesn't copy home directory hidden files)

scp -P2220 -r simben90@oslab.cabrillo.edu:.. .

Recursive copy of remote home directory to current local directory (includes hidden files in home directory)

scp -P2220 simben90@oslab.cabrillo.edu:simben90.tar .

Copies archive file in remote home directory to current local directory

scp -P2220 -r simben90@oslab.cabrillo.edu:/home/cis90/answers answers/

Recursive copy of class answers directory to local directory named answers (which must be created first)