



Lesson Module Checklist

- Slides
- WB - converted
- Flash cards
- Page numbers
- 1st minute quiz
- Web Calendar summary
- Web book pages
- Commands
- Blackboard Practice Test ready and scheduled
- Practice Test systems ready
- Schedule midnight turnin directory lock
- Schedule midnight backup of all myscript files
- Backup slides, CCC info, handouts on flash drive
- Check that backup room headset is charged
- Spare 9v battery for mic



Student Learner Outcomes

1. Navigate and manage the UNIX/Linux file system by viewing, copying, moving, renaming, creating, and removing files and directories.
2. Use the UNIX features of file redirection and pipelines to control the flow of data to and from various commands.
3. With the aid of online manual pages, execute UNIX system commands from either a keyboard or a shell script using correct command syntax.

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/>)



Student checklist

(How to attend from home or in the classroom)

- 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

Student checklist (How to layout your screen when attending class)

CCC Confer

Downloaded PDF of Lesson Slides

The screenshot displays a virtual classroom environment with several overlapping windows:

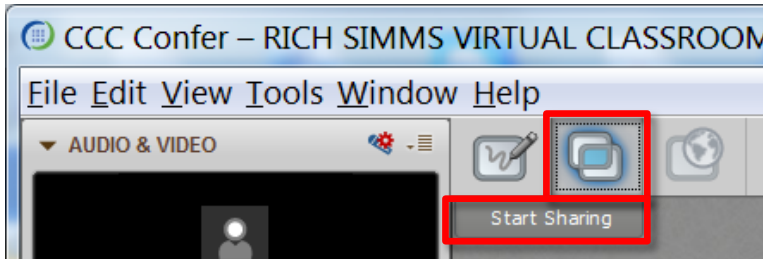
- Blackboard Co. x Google x Rich's Cabrillo x simms-teach.com**: The top browser tabs.
- simms-teach.com/cis90calendar.php**: A calendar page for CIS 90 (Spring) with a table showing Lesson 1 on 1/28.
- CCC Confer - RICH SIMMS VIRTUAL CLASSROOM**: A video conference window showing a participant named Rich-Simms and a list of participants (Benji Simms, Rich-Simms, Benji Simms).
- cis90lesson01.pdf - Adobe Acrobat Pro**: A PDF document titled "CIS 90 - Lesson 1" showing a slide about "The CIS 90 System Playground" with Ubuntu VMs.
- Google Maps**: A map window showing the location of Cabrillo College, San Geronimo, Aptos, CA.
- Terminal Window**: A terminal window showing a login session to Opus, displaying the password and the message "Welcome to Opus serving Cabrillo College".

CIS 90 website
Calendar page

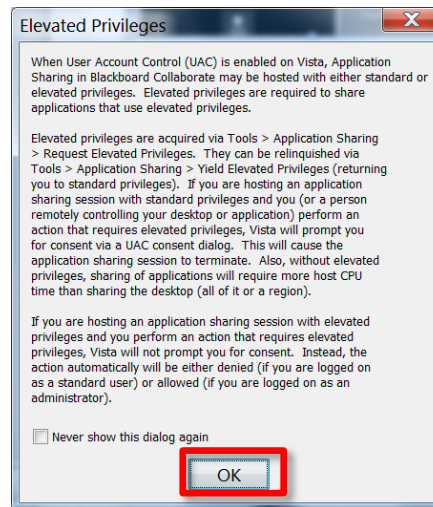
One or more login
sessions to Opus

Student checklist (To share your desktop with the class)

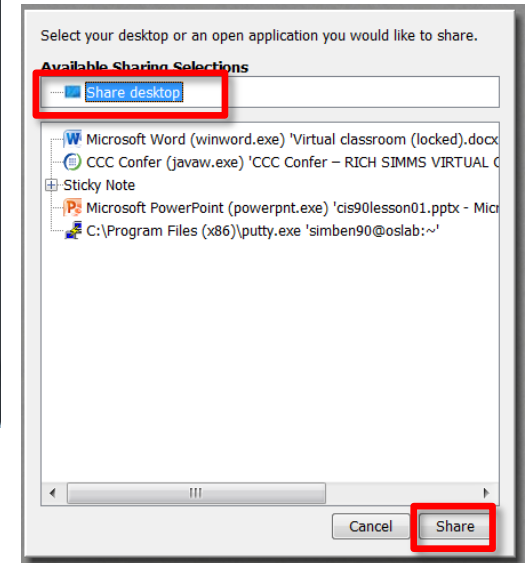
1) Instructor gives you sharing privileges



2) Click overlapping rectangles icon. If white "Start Sharing" text is present then click it as well.



3) Click OK button.



4) Select "Share desktop" and click Share button.



Instructor: **Rich Simms**

Dial-in: **888-886-3951**

Passcode: **136690**



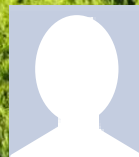
Al



Tim



Emilio



Chris



Eddie



Clara



Ryan



Ethan



Monte



Cameron



Django



Tess



Ahmad



Mike



Mario



Roberto



Benji



John



Efrain



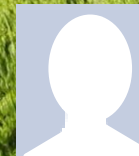
Mateo



Ian



Abraham C.



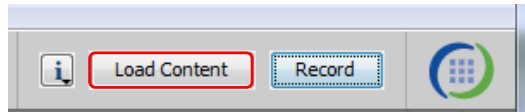
Abraham N.



Rich's CCC Confer checklist - setup

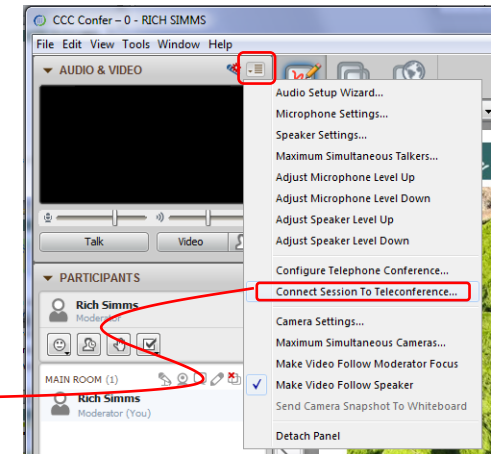
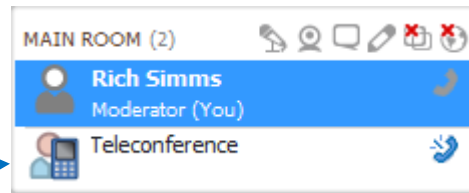


[] Preload White Board



[] Connect session to Teleconference

Session now connected to teleconference



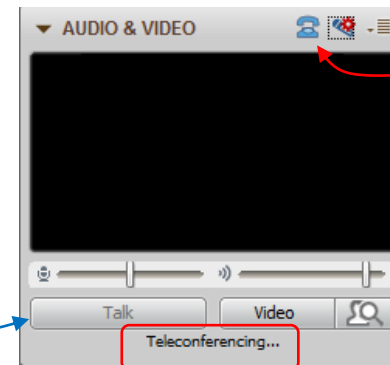
[] Is recording on?



Red dot means recording

[] Use teleconferencing, not mic

Should be greyed out



Should show as this live "off hook" telephone handset icon and the Teleconferencing ... message displayed

Rich's CCC Confer checklist - app layout



The screenshot displays a Windows desktop with several applications open, arranged in a specific layout for a CCC Confer session. Red labels with arrows point to specific applications:

- foxi for slides**: Points to the Foxit Reader window displaying a PDF document.
- chrome**: Points to the Google Chrome browser window showing a webpage with flashcard questions.
- putty**: Points to the PuTTY terminal window showing a login session.
- vSphere Client**: Points to the vCenter - vSphere Client window showing virtual machine management.

Other visible applications include:

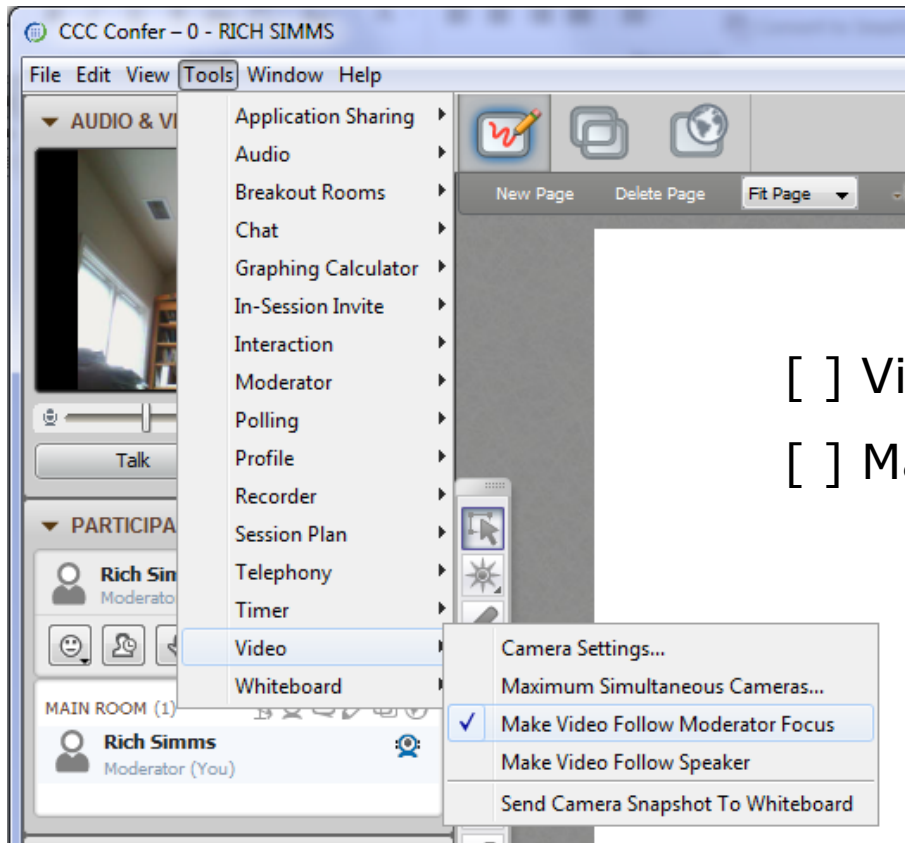
- CCC Confer - 0 - RIC...**: The main conferencing application window.
- File Explorer**: A window showing the file system structure.
- Task Manager**: A window showing system resources.
- Windows Taskbar**: The bottom bar with various icons and the system clock showing 6:52 AM on 10/10/2012.

[] layout and share apps





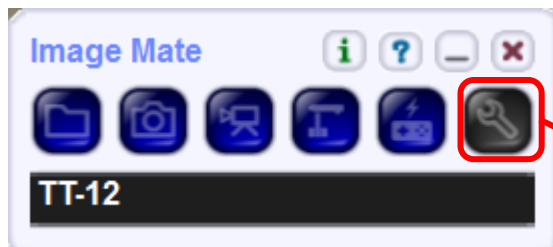
Rich's CCC Confer checklist - video



[] Video (webcam)

[] Make Video Follow Moderator Focus

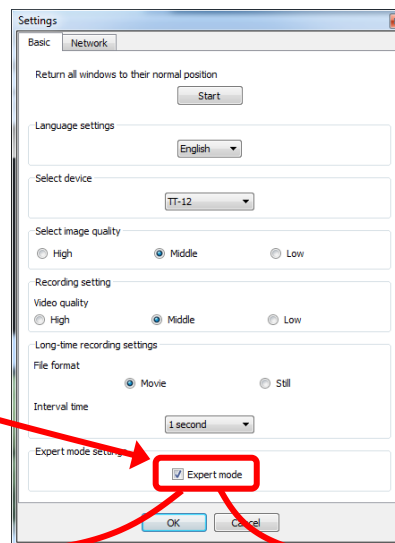
Rich's CCC Confer checklist - Elmo



Elmo rotated down to view side table



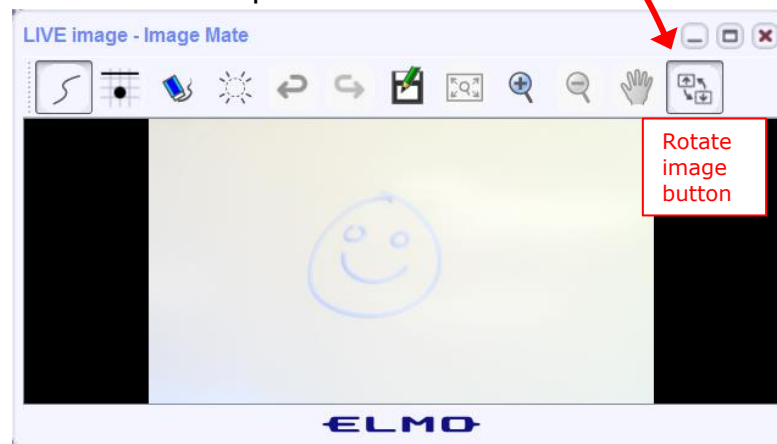
Run and share the Image Mate program just as you would any other app with CCC Confer



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



Rich's CCC Confer checklist - universal fix



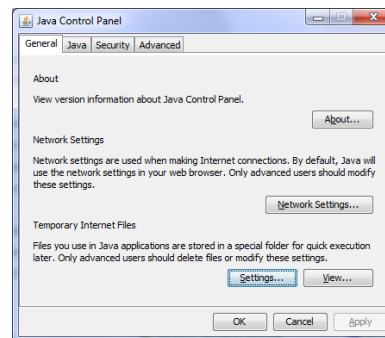
Universal Fix for CCC Confer:

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

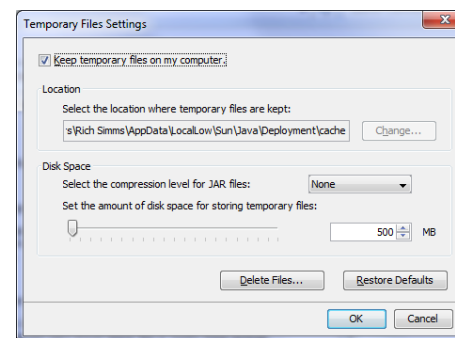
Control Panel (small icons)



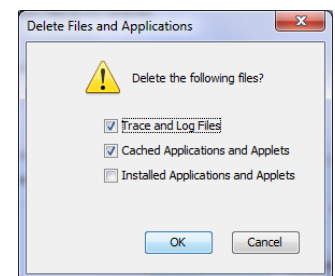
General Tab > Settings...



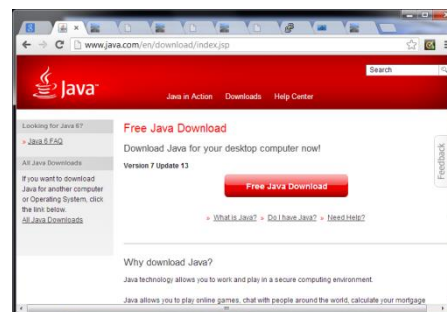
500MB cache size



Delete these



Google Java download



Quiz

Please answer these questions **in the order** shown:

See electronic white board

email answers to: risimms@cabrillo.edu

(answers must be emailed within the first few minutes of class for credit)

Quiz

**No Quiz
Today !**



File Transfer and Review

Objectives	Agenda
<ul style="list-style-type: none">• Transfer project files to Windows and Linux systems• Prepare for final exam	<ul style="list-style-type: none">• No Quiz• Questions• Linux and Telephones• Housekeeping• Final Exam• Test Tips• File transfer continued• Compressed archives• Make your own Opus• Project Presentations• Wrap up



Sound Check



*Students that dial-in should mute their line using *6 to prevent unintended noises distracting the web conference.*

*Instructor can use *96 to mute all student lines.*



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.

Linux and Telephones



Way back in Lesson 1

Apple iOS



The Apple iOS, internally known as Darwin, like Mac OS X, runs on a Unix-like kernel (Mach kernel + BSD components)

Android



Android smartphones use the Linux kernel



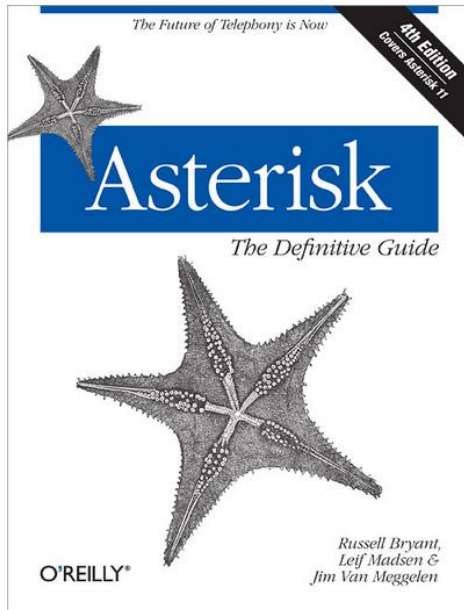
Telephone System Terminology

PSTN (Public Switched Telephone Network) - The global telecommunication infrastructure.

PBX (Private Branch Exchange) - a telephone system used by a business or organization. Each user has their own extension. Trunk lines connect the PBX to the PSTN for incoming and outgoing calls.

SIP (Session Initiation Protocol) - a protocol used for voice/video sessions.

VoIP (Voice over IP) - umbrella group of technologies for delivering voice communications and multimedia sessions.



- Open source PBX (Private Branch Exchange) software.
- Implements a complete VOIP phone system.
- Created in 1999 by Mark Spencer of Digium.
- <http://www.asterisk.org/>

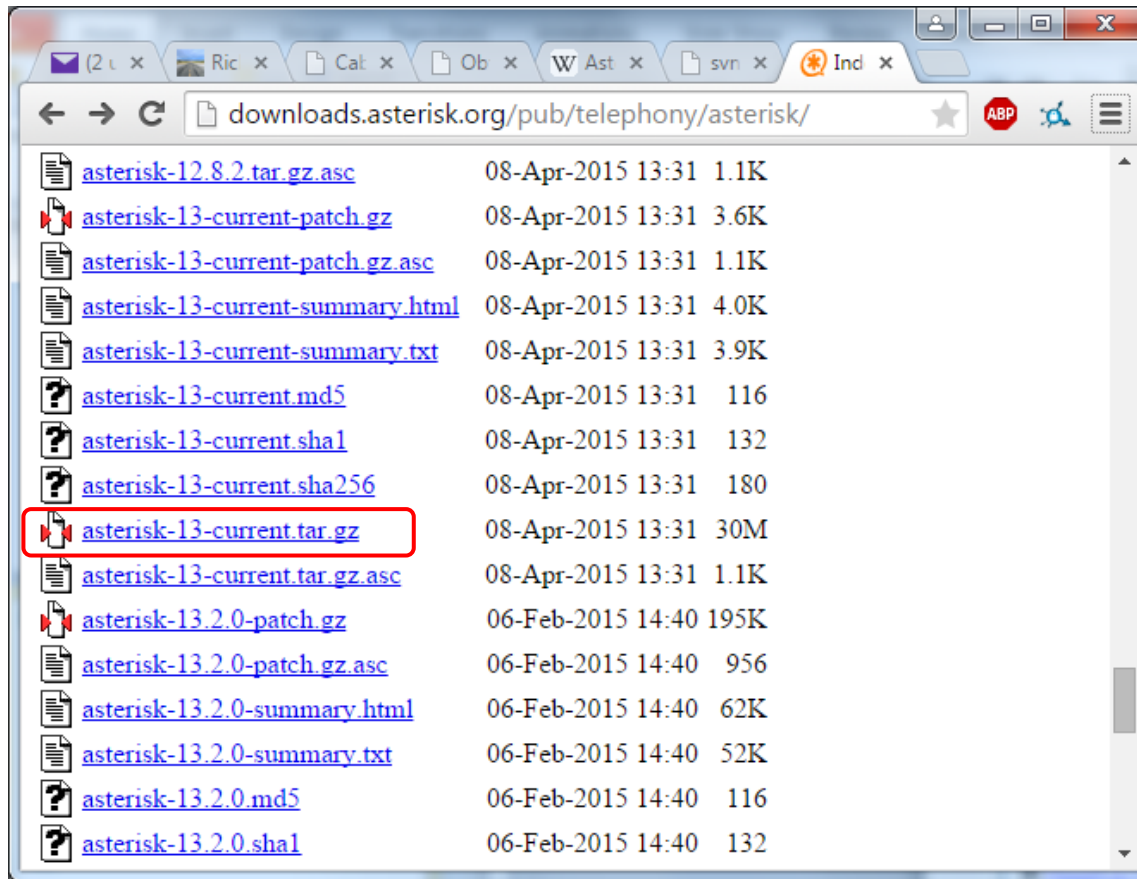


- Open-source web-based GUI (Graphical User Interface) to manage Asterisk.
- <http://www.freepbx.org/>

Asterisk Source Code



<http://downloads.asterisk.org/pub/telephony/asterisk/>



Asterisk is licensed under the GNU GPL which means you have the freedom to download, view and modify the source code.

All the files for each version have been tarred and compressed into a single tarball.

Obtaining the current version Asterisk source code to examine

Asterisk app_voicemail.c source code file

FYI
only

```
C:\cygwin\home\Rich Simms\app_voicemail.c - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
C source file
length: 526330 lines: 16089 Ln:1 Col:1 Sel:0|0

1  /*
2  * Asterisk -- An open source telephony toolkit.
3  *
4  * Copyright (C) 1999 - 2006, Digium, Inc.
5  *
6  * Mark Spencer <markster@digium.com>
7  *
8  * See http://www.asterisk.org for more information about
9  * the Asterisk project. Please do not directly contact
10 * any of the maintainers of this project for assistance;
11 * the project provides a web site, mailing lists and IRC
12 * channels for your use.
13 *
14 * This program is free software, distributed under the terms of
15 * the GNU General Public License Version 2. See the LICENSE file
16 * at the top of the source tree.
17 */
18
19 /*!
20 * \file
21 * \author Mark Spencer <markster@digium.com>
22 * \brief Comedian Mail - Voicemail System
23 *
24 * \par See also
25 * \arg \ref Config_vm
26 * \note For information about voicemail IMAP storage, https://wiki.asterisk.
27 * \ingroup applications
28 * \todo This module requires res_adsi to load. This needs to be optional
29 * during compilation.
30 *
31 * \todo This file is now almost impossible to work with, due to all \#ifdefs
32 */
33
34
35
```

You can see it was authored by Mark Spencer and licensed under the GNU GPL (General Public License).

```
C:\cygwin\home\Rich Simms\app_voicemail.c - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
C source file
length: 526330 lines: 16089 Ln:1 Col:1 Sel:0|0

1776
1777 /*!
1778 * \brief The handler for the change password option.
1779 * \param vmu The voicemail user to work with.
1780 * \param newpassword The new password (that has been gathered from the appropriate prompting).
1781 * This is called when a new user logs in for the first time and the option to force them to change their password is set.
1782 * It is also called when the user wants to change their password from menu option '5' on the mailbox options menu.
1783 */
1784 static void vm_change_password(struct ast_vm_user *vmu, const char *newpassword)
1785 {
1786     struct ast_config *cfg = NULL;
1787     struct ast_variable *var = NULL;
1788     struct ast_category *cat = NULL;
1789     char *category = NULL, *value = NULL, *new = NULL;
1790     const char *tmp = NULL;
1791     struct ast_flags config_flags = { CONFIG_FLAG_WITHCOMMENTS };
1792     char secretfn[PATH_MAX] = "";
1793     int found = 0;
1794
1795     if (!change_password_realtime(vmu, newpassword))
1796         return;
1797
1798     /* check if we should store the secret in the spool directory next to the messages */
1799     switch (vmu->passwordlocation) {
1800     case OPT_FWLDC_SPOOLDIR:
1801         snprintf(secretfn, sizeof(secretfn), "%s/%s/secret.conf", VM_SPOOL_DIR, vmu->context, vmu->mailbox);
1802         if (write_password_to_file(secretfn, newpassword) == 0) {
1803             ast_test_suite_event_notify("PASSWORDCHANGED", "Message: secret.conf updated with new password\r\nPasswordSource: secret.conf");
1804             ast_verb(4, "Writing voicemail password to file %s succeeded\n", secretfn);
1805             reset_user_pw(vmu->context, vmu->mailbox, newpassword);
1806             ast_copy_string(vmu->password, newpassword, sizeof(vmu->password));
1807             break;
1808         } else {
1809             ast_verb(4, "Writing voicemail password to file %s failed, falling back to config file\n", secretfn);
1810
```

It is written in the C language.
The C function shown on the right implements voicemail user password changes.

Making your own telephone system on a budget



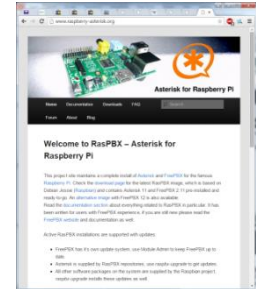
Soft Phone
X-Lite
Free

<http://www.counterpath.com/x-lite-download/>



raspbx download
(Asterisk + FreePBX)

Free download, SD card ~\$12
<http://www.raspberry-asterisk.org/downloads/beta-image/>



raspbx documentation
Free

<http://www.raspberry-asterisk.org/>



Linux Computer
Raspberry Pi 2
\$39.99

<http://tinyonestore.com/>



SIP phone
Polycom SoundPoint IP 331
\$15.00

<http://ebay.com/>



Network Switch
RouterBoard (Mikrotik) RB260GS
\$38.95

<http://www.streakwave.com/>



SIP phone
Polycom SoundPoint IP 331
\$15.00

<http://ebay.com/>

Polycom SoundPoint IP Phones



SIP phone
Polycom SoundPoint IP 331

Is it a phone?
Is it a computer?



SEPTEMBER 2013 | 3725-47083-002/A

Polycom® Voice OFFER of Source for GPL and LGPL Software

You may have received from Polycom®, certain products that contain—in part—some free software (software licensed in a way that allows you the freedom to run, copy, distribute, change, and improve the software).

As a part of this product, Polycom may have distributed to you hardware and/or software, or made electronic downloads, that contain a version of alsa-lib, alsasink, alsa-utils, BlueZ, busybox-1.11.1, DirectFB, fbset, ffmpeg, ffmpegdec, glibc, glib2, gst-openmax, gstreamer, libomxil-bellagio, libstdc++ 4.3.2, libusb, Libxml, **Linux Kernel**, module-init-tools-3.2.2, mtd-utils-1.2.0-1.fc10, omxvideodec, procps-3.2.7-20.fc9, SDL, tsattach-1.0, tslib, u-boot, udev-092, WebKit, wireless-tools, wrsv-1.1, and x-loader, which are **free software programs developed by the Free Software Foundation**. With your purchase of the products listed in Table A, Polycom has granted you a license to the above-mentioned software under the terms of the GNU General Public License (GPL), GNU Library General Public License (LGPLv2), or GNU Lesser General Public License (LGPL). The text of these Licenses can be found in Licenses on page 19.

For at least three years from the date of distribution of the applicable product or software, we will give to anyone who contacts us at the contact information provided below, for a charge of no more than our cost of physically distributing, the following items:

- A copy of the complete corresponding machine-readable source code for programs listed below that are distributed under the GNU GPL
- A copy of the corresponding machine-readable source code for the libraries listed below that are distributed under the GNU LGPL, as well as the executable object code of the Polycom work that the library links with

The software included or distributed for the product, including any software that may be downloaded electronically via the internet or otherwise (the "Software") is licensed, not sold. The customer may modify any of the Libraries listed below licensed under the GNU LGPL, and then re-link to produce a modified executable containing the modified Library. Customers who choose to modify the original software delivered by Polycom for the product void all WARRANTY, SERVICE and SOFTWARE SUPPORT agreements.

Table A: Polycom® Products Incorporating GPL and LGPL Software

Business Media Phones: Polycom VVX® 300, Polycom VVX® 310, Polycom VVX® 400, Polycom VVX® 410, Polycom VVX® 500, Polycom VVX® 600, Polycom VVX® 1500, Polycom VVX® 1500 D

SoundStructure: Polycom SoundStructure® VoIP Interface Plug-in Card

Add User (extension) to PBX



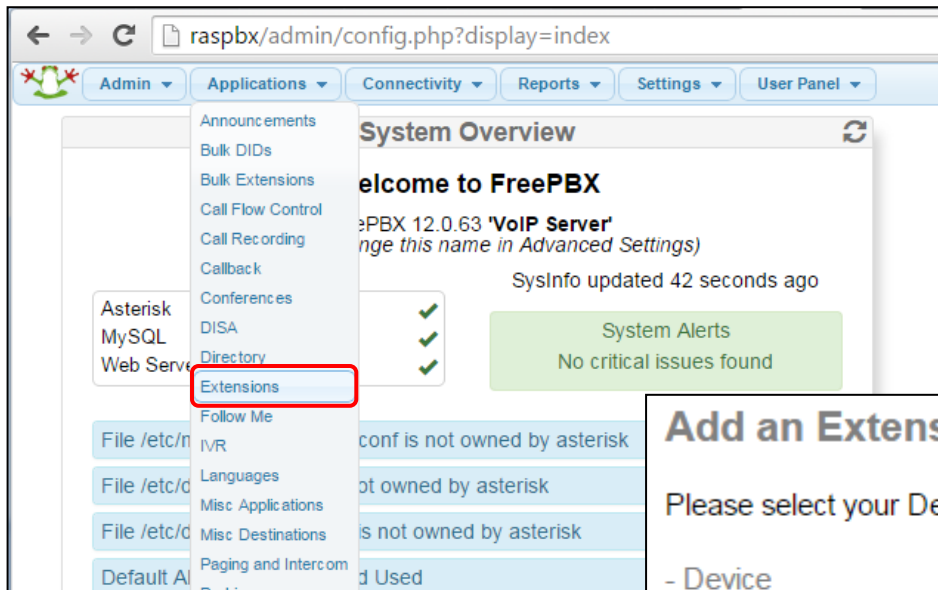
Adding New Extension (user) on PBX

FYI
only

http://<ip-of-pbx-server>



raspbx server
(Asterisk + FreePBX on Linux)



Add an Extension

Please select your Device below then click Submit

- Device

Device Generic CHAN SIP Device ▼

Add new SIP phone extension using FreePBX web page

Adding New Extension (user) on PBX

FYI
only

CIS 90 VLab Assignments

Student	Hostname
Abraham C.	Arya-12
Abraham N.	Arya-66
Ahmad	Arya-75
Al	Arya-03
Benji C.	Arya-54
Benji S.	Arya-02
Cameron	Arya-68
Chris	Arya-35
Clara	Arya-17
Diego	Arya-73
Django	Arya-08
Duke	Arya-46
Eddie	Arya-72
Efrain	Arya-38
Emilio	Arya-74
Ethan	Arya-21
Geoffrey	
Gerlinde	
Homer	
Ian	
Ivers	
John	
Mario	
Mateo	
Matt	
Melissa	
Mike	
Monte	
Nick	
Rick	
Roberto	
Ryan	
Sean	
Sherpa	
Sky	
Tanner	
Tess	
Tim	Arya-23
TBD	Arya-57
TBD	Arya-31
TBD	Arya-47
TBD	Arya-19
TBD	Arya-13
TBD	Arya-60



raspbx server
(Asterisk + FreePBX on Linux)

- Add Extension

User Extension?

470

Display Name?

Sherpa

CID Num Alias?

SIP Alias?

Portion of FreePBX "Add Extension" web page

*Enter User Extension and Display Name
(4xx is "4" + student CIS 90 VM pod number)*

Adding New Extension (user) on PBX



raspbx server
(Asterisk + FreePBX on Linux)

- Device Options

This device uses **CHAN_SIP** technology listening on :5060

Secret [?]

DTMF Signaling [?]

NAT Mode [?]

Portion of FreePBX "Add Extension" web page

Set Secret password to use when adding handset later

Adding New Extension (user) on PBX



raspbx server
(Asterisk + FreePBX on Linux)

- Voicemail

Status	<input type="text" value="Enabled"/>
Voicemail Password ?	<input type="text" value="12345"/>
Require From Same Extension ?	<input type="button" value="yes"/> <input type="button" value="no"/>
Email Address ?	<input type="text" value="watshe90@opus.cis.cabrillo.edu"/>
Pager Email Address ?	<input type="text" value="watshe90@opus.cis.cabrillo.edu"/>
Email Attachment ?	<input type="button" value="yes"/> <input type="button" value="no"/>
Play CID ?	<input type="button" value="yes"/> <input type="button" value="no"/>
Play Envelope ?	<input type="button" value="yes"/> <input type="button" value="no"/>
Delete Voicemail ?	<input type="button" value="yes"/> <input type="button" value="no"/>

Portion of FreePBX "Add Extension" web page

Configure voicemail and use Opus email address

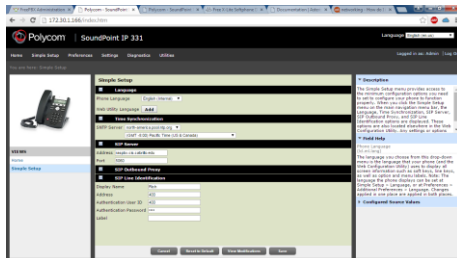
Add SIP Hard Phone to Network



Configure SIP "Hard" Phone as extension

FYI
only

`http://<ip-of-sip-phone>`



SIP phone

is connected using standard LAN cable

Simple Setup	
Language	
Phone Language	English (Internal) ▼
Web Utility Language	Add
Time Synchronization	
SNTP Server	north-america.pool.ntp.org ▼
	(GMT -8:00) Pacific Time (US & Canada) ▼
SIP Server	
Address	raspbx.cis.cabrillo.edu
Port	5060
SIP Outbound Proxy	
SIP Line Identification	
Display Name	Rich
Address	400
Authentication User ID	400
Authentication Password	****
Label	

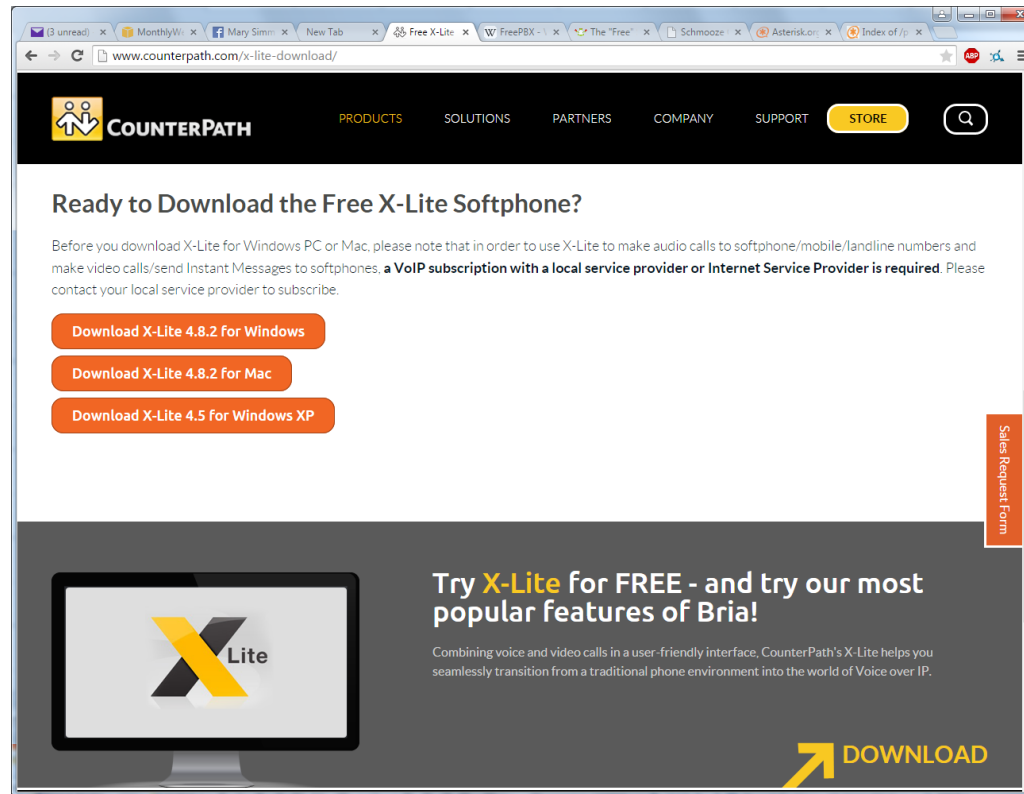
Configure SIP phone with extension number and address of PBX server

Add SIP Soft Phone to Network



X-Lite soft phone

<http://www.counterpath.com/x-lite-download/>



The screenshot shows a web browser window with the URL www.counterpath.com/x-lite-download/. The page features a dark navigation bar with the CounterPath logo and links for PRODUCTS, SOLUTIONS, PARTNERS, COMPANY, SUPPORT, and a STORE button. Below the navigation bar, the main heading reads "Ready to Download the Free X-Lite Softphone?". A paragraph of text explains that a VoIP subscription is required. Three orange buttons are provided for downloading X-Lite 4.8.2 for Windows, X-Lite 4.8.2 for Mac, and X-Lite 4.5 for Windows XP. A vertical "Sales Request Form" button is on the right. At the bottom, a large banner shows a computer monitor with the X-Lite logo, followed by the text "Try X-Lite for FREE - and try our most popular features of Bria!". A large yellow arrow points to a "DOWNLOAD" button.

Ready to Download the Free X-Lite Softphone?

Before you download X-Lite for Windows PC or Mac, please note that in order to use X-Lite to make audio calls to softphone/mobile/landline numbers and make video calls/send Instant Messages to softphones, **a VoIP subscription with a local service provider or Internet Service Provider is required.** Please contact your local service provider to subscribe.

[Download X-Lite 4.8.2 for Windows](#)

[Download X-Lite 4.8.2 for Mac](#)

[Download X-Lite 4.5 for Windows XP](#)

[Sales Request Form](#)

Try **X-Lite** for FREE - and try our most popular features of Bria!

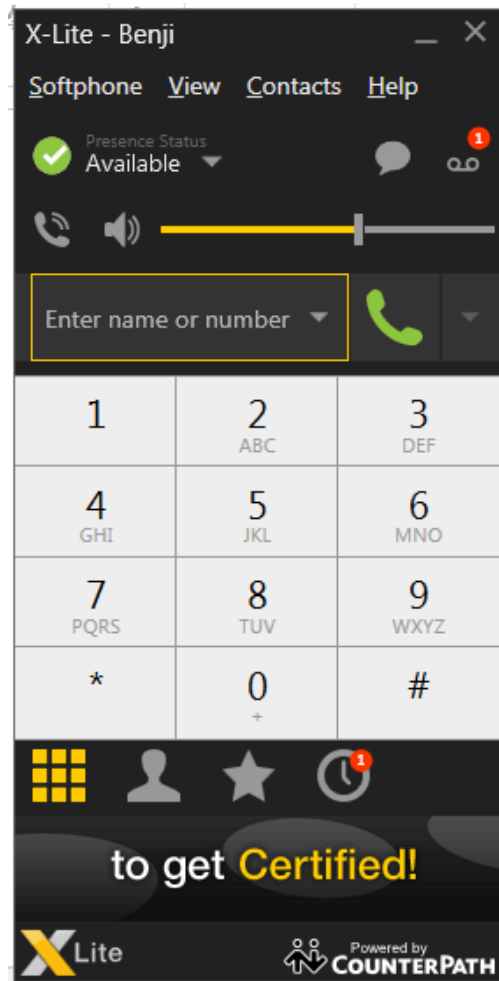
Combining voice and video calls in a user-friendly interface, CounterPath's X-Lite helps you seamlessly transition from a traditional phone environment into the world of Voice over IP.

[DOWNLOAD](#)

Lets you use your PC as an phone extension

Configure soft phone as extension

FYI
only



Softphone > Account Settings

Account Voicemail Topology Presence Transport Advanced

Account name: Account 1

Protocol: SIP

Allow this account for

☒ Call

☒ IM / Presence

User Details

* User ID: 402

* Domain: raspbx.cis.cabrillo.edu

Password:

Display name: Benji

Authorization name:

Domain Proxy

☒ Register with domain and receive calls

Send outbound via:

☒ Domain

☐ Proxy Address:

Dial plan: #1\|a.T;match=1;prestrip=2;

Configure soft phone with extension number and address of PBX server

Configure soft phone as extension

FYI
only

Softphone > Preferences > Devices > [Test Devices]

The image shows two overlapping windows from a softphone application. The background window is the 'Preferences' dialog, with the 'Devices' tab selected. In the 'Devices' section, 'Automatic gain control' and 'Reduce background noise' are checked. Under 'Test Devices', 'Test Camera' is active. The 'Headset Mode' checkbox is checked, and the 'Speakerphone' checkbox is unchecked. The 'Speaker' dropdown is set to 'Speakers and Headset', and the 'Microphone' dropdown is set to 'Internal Mic (IDT HiFi)'. The foreground window is the 'Troubleshooting' dialog, with the 'Devices' tab selected. It shows a green checkmark and the text 'Your microphone works'. The 'You are currently in: Headset mode' section contains two steps: '1. Select the microphone you want to use:' with a dropdown menu showing 'Microphone (High Definition Audio Device)', and '2. Speak into the microphone:' with a green progress bar. The '3. Select the speakers you want to use:' section shows a dropdown menu with 'Speakers (High Definition Audio Device) 2' selected, a green progress bar, and a 'No Sound?' button. A 'Done' button is at the bottom right.

Preferences

Application
Alerts & Sounds
Devices
Audio Codecs
Video Codecs
Calls

Devices

☒ Automatic gain control
☒ Reduce background noise

Test Devices **Test Camera**

☒ Headset Mode ☐ Speakerphone

Speaker: Speakers and Headset
Microphone: Internal Mic (IDT HiFi)

Troubleshooting

☒ Devices ☐ Audio ☐ Diagnostics

You are currently in: Headset mode

1. Select the microphone you want to use:
Microphone (High Definition Audio Device)

2. Speak into the microphone:
[Green progress bar]

☒ Your microphone works

3. Select the speakers you want to use:
Speakers (High Definition Audio Device) 2
[Green progress bar]

4. [Green progress bar] **No Sound?**

☒ Your speakers work

Done

Configure soft phone audio to use computer headset

How to reset used Polycom phone to factory defaults

FYI
only

richsimms - Y x Rich's Cabrill x CIS 90 - Sprin x CIS Lab x FreePBX Adm x Polycom - So x Polycom VoIP x

voipt2.polycom.com

Polycom | Support
Click the ICON to go to Polycom Support pages

Welcome to the Polycom VoIP Phone Provisioning Server

Getting Started

This is a publicly accessible server intended only for use of provisioning, upgrading, or downgrading the software of Polycom IP phones with stock Polycom software and configuration files.

Multiple 'stock' directories exist with different versions of SIP, UC, and BootROM software, and are named according to the SIP or UC software version contained within. These directories are completely **Stock**; no changes should be made to any configuration files within.

Each directory contains an [ABOUT.TXT](#) to indicate which SIP and BootROM software versions exist within that directory.

To Provision Your Polycom VoIP Phone:

1. From the phone's local menu interface, press **Menu > Settings > Advanced** (default password: 456) > **Administration Settings > Network Configuration > Server Menu**.
2. Configure your DHCP menu:
On 3.x Phones: Main Menu > Settings > Advanced > Admin Settings > Network Configuration > DHCP Menu
On 4.x/5.x phones: Main Menu > Settings > Advanced > Admin Settings > Network Configuration > Provisioning Server > DHCP Menu set the following:
 Boot Server: **Static**
 BootSrv Type: **IP Address** (Once phone is upgraded, please remove the IP address from the phone!!!)
3. From the Provisioning Server menu set: **Server Type: HTTP**
4. Next input Server Address as **voipt2.polycom.com** or **IP** Example to load the latest SIP 4.06 = **voipt2.polycom.com/406**
 - a. Note **voipt2.polycom.com** can be entered in IP form, enter: Example **140.242.64.35/406** for convenience.
5. Unless otherwise instructed by VoIP Support, do not change Server User or Password.
 (Optional): Specify a directory for the SIP or UC software version you wish the phone to provision, as listed below.

IMPORTANT NOTE: Using this server to provision your phone will erase all preferences and will restore all settings to their Factory Default Values!
ALL SETTINGS WILL BE LOST!!

Used phones may have previous configuration on them

How to reset used Polycom phone to factory defaults

FYI
only

richsimms - Y x Rich's Cabril x CIS 90 - Sprin x CIS Lab x FreePBX Adm x Polycom - So x downloads.p x

← → ↻ downloads.polycom.com/voice/voip/sip_sw_releases_matrix.html

Polycom® UC Software Release Matrix For SoundPoint IP and SoundStation IP Phones

The Polycom UC Software Release Matrix For VX Phones and SoundStructure VoIP Interface Card can be found [here](#).

Release	Release Notes	IP301	IP320/330	IP321/331	IP335	IP430	IP450	IP501	IP550	IP560	IP600	IP601	IP602
4.1.1 (MS Lync Only) Combined	View	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.1.1 (MS Lync Only) Split		No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.1.0 Rev S (MS Lync Only) Combined	View	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.1.0 Rev S (MS Lync Only) Split		No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.1.0 Rev B (MS Lync only) Combined	View	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.1.0 Rev B (MS Lync only) Split		No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.0.8 Rev C Combined	View	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.0.8 Rev C Split		No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.0.7 Combined	View	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.0.7 Split		No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.0.6 Combined	View	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y

Installing latest firmware on a Polycom phone

Classroom Testing Checklist



1. Install X-Lite on instructor station
2. Connect Poly-01 and Poly-02 to classroom LAN
3. Find IP address of raspbx, poly-01 and poly-02
 - a) raspbx = 172.30.1.32 (has IP reservation)
 - b) poly-01 = 172.30.1.xxx
 - c) poly-02 = 172.30.1.xxx
4. Delete all current extensions on PBX
5. Add Rich as x400 for Poly-01 hard phone
6. Add Benji as x402 for X-Lite soft phone on Instructor station
7. Test x400 <-> x402
 - a) Voice session
 - b) Voicemail
8. Have volunteer students configure each other (PBX first, then handset)
 - a) Student 1 x4<pod number> for Poly-02
 - b) Student 2 x4<pod number> on X-Lite + Plantronics headset
 - c) Student 3 x4<pod number> on X-Lite + Plantronics headset

NoPar#**show ip dhcp binding**

ip dhcp pool baby-opus-828
host 172.30.1.31 255.255.255.0
client-identifier 01b8.27eb.b7b3.99

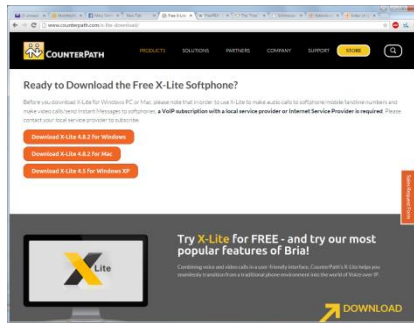
ip dhcp pool raspbx-828
host 172.30.1.32 255.255.255.0
client-identifier 01b8.27eb.7879.7d

Poly-01: 00:04:F2:24:29:60
Poly-02: 00:04:F2:24:78:D7
Raspbx: B8:27:EB:78:79:7D

Student Volunteer Checklist



1. Google "x-lite download" and install X-Lite for Windows on workstation (including C++ libraries)

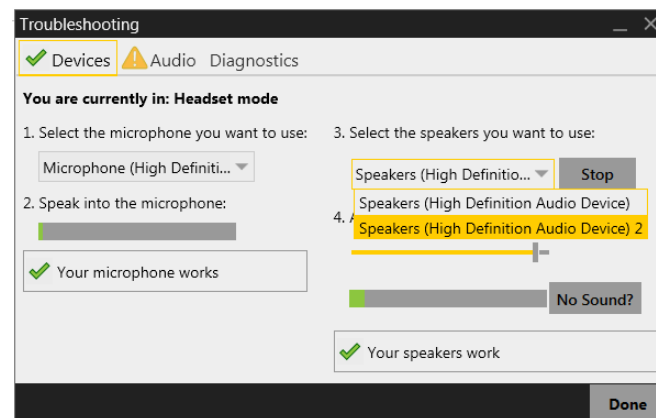
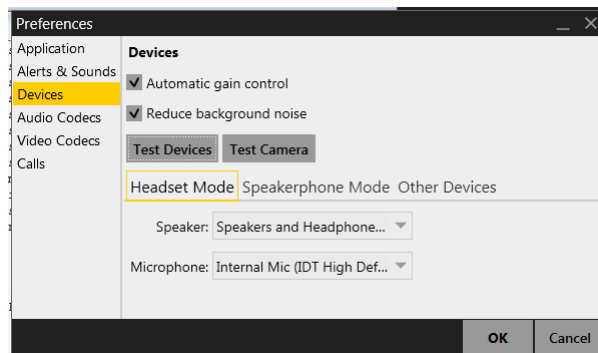


<http://www.counterpath.com/x-lite-download/>

Download X-Lite 4.8.2 for Windows

2. Plug in Plantronics headset and configure X-Lite audio speakers

Softphone > Preferences > Devices > [Test Devices]



MACs and IPs

FYI
only

Poly-01: 00:04:F2:24:29:60

Poly-02: 00:04:F2:24:78:D7

Raspbx: B8:27:EB:78:79:7D

NoPar#**sh ip dhcp binding**

Bindings from all pools not associated with VRF:

IP address	Client-ID/ Hardware address/ User name	Lease expiration	Type
172.20.4.150	0100.5056.65c0.b3	May 10 2015 07:30 PM	Automatic
172.20.9.247	01f0.4da2.4091.81	May 10 2015 07:52 PM	Automatic
172.30.1.31	b827.ebb7.b399	Infinite	Manual
172.30.1.32	01b8.27eb.7879.7d	Infinite	Manual
172.30.1.164	01b8.ca3a.83e2.e0	May 10 2015 07:15 PM	Automatic
172.30.1.166	0004.f224.2960	May 10 2015 07:22 PM	Automatic
172.30.1.167	0110.1f74.6b62.cc	May 10 2015 08:44 PM	Automatic
172.30.1.168	01f0.4da2.4091.7d	May 10 2015 07:52 PM	Automatic
172.30.1.169	0004.f224.78d7	May 10 2015 08:56 PM	Automatic
172.30.1.170	01b8.ca3a.83df.2d	May 10 2015 08:56 PM	Automatic
172.30.1.190	b8ca.3a92.e0fd	May 10 2015 08:18 PM	Automatic
172.30.1.193	01b8.ca3a.7cc8.8a	May 10 2015 07:46 PM	Automatic
172.30.2.212	01f0.4da2.4091.7f	May 10 2015 07:52 PM	Automatic

NoPar#

raspbx

poly-01

poly-02



PBX command line

```
root@raspbx:~# asterisk -r
Asterisk 11.17.0, Copyright (C) 1999 - 2013 Digium, Inc. and others.
Created by Mark Spencer <markster@digium.com>
Asterisk comes with ABSOLUTELY NO WARRANTY; type 'core show warranty' for details.
This is free software, with components licensed under the GNU General Public
License version 2 and other licenses; you are welcome to redistribute it under
certain conditions. Type 'core show license' for details.
=====
Connected to Asterisk 11.17.0 currently running on raspbx (pid = 4063)
raspbx*CLI> sip show users
```

Username	Secret	Accountcode	Def.Context	ACL
Forcerport				
400	Cabrillo		from-internal	Yes No
402	Cabrillo		from-internal	Yes No
407	Cabrillo		from-internal	Yes No
446	Cabrillo		from-internal	Yes No

```
raspbx*CLI>
raspbx*CLI> exit
Asterisk cleanly ending (0).
Executing last minute cleanups
```

Show configured user extensions



PBX command line

```
root@raspbx:~# amportal stop
```

```
Please wait...
```

```
STOPPING ASTERISK
```

```
Waiting for Asterisk to Stop Gracefully...
```

```
Asterisk Stopped
```

```
root@raspbx:~#
```

Gracefully shutting down asterisk



Housekeeping

**Project is
due tonight!**



- Final project **due 11:59 PM** tonight.
- Don't forget to **submit** using the instructions:

```
cp myscript /home/rsimms/turnin/cis90/myscript.$LOGNAME
```
- Project presentations after lesson material today.
- Final exam is next week **Monday** May 18th.
- Extra credit labs and forum posts due 11:59 PM day of the final exam.
- Practice test for final exam will be available at noon today.
- Practice test server will shutdown at 6:30 AM day of the final exam.

Grading rubric (60 points maximum)

Possible Points	Requirements
30	Implementing all five tasks (6 points each): <ul style="list-style-type: none"> Requirements for each task: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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) <p>The maximum for this section is 25 points.</p>
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: <ul style="list-style-type: none"> 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

Final project status 5/11/2015

```
[rsimms@oslab project]$ ./progress
myscript file: (simben90) 2015-04-21 09:17:58 exists readable executable 10512
myscript file: (milhom90) 2015-04-21 09:19:36 exists readable executable 4729
myscript file: (contim90) 2015-04-29 11:08:47 exists readable executable 1215
myscript file: (harian90) not found
myscript file: (lipjoh90) not found
myscript file: (logrya90) not found
myscript file: (moocam90) 2015-05-06 23:46:06 exists readable executable 3897
myscript file: (oreefr90) 2015-05-08 15:34:00 exists readable executable 4455
myscript file: (whiwi90) not found
myscript file: (allahm90) 2015-05-08 20:42:17 exists readable executable 7177
myscript file: (camabr90) 2015-04-22 10:56:57 exists readable executable 716
myscript file: (copchr90) 2015-05-06 08:45:22 exists readable executable 4664
myscript file: (corben90) 2015-05-06 10:29:18 exists readable executable 1428
myscript file: (ebeeth90) not found
myscript file: (fegmic90) 2015-05-10 16:58:04 exists readable executable 16212
myscript file: (feredu90) 2015-04-30 21:58:56 exists readable executable 886
myscript file: (lilcla90) 2015-05-10 10:42:17 exists readable executable 4683
myscript file: (lopemi90) 2015-05-08 13:49:57 exists readable executable 4381
myscript file: (mcgmon90) 2015-05-11 09:29:44 exists readable executable 6881
myscript file: (permar90) 2015-05-08 22:18:09 exists readable executable 5097
myscript file: (prites90) 2015-05-08 16:32:21 exists readable executable 12438
myscript file: (nieabr90) not found
myscript file: (atirob90) 2015-04-29 00:08:38 exists not readable not executable 546
myscript file: (marmat90) 2015-05-07 22:15:23 exists readable executable 3308
myscript file: (espale90) not found
[rsimms@oslab project]$
```

*To get started see
Lesson 13 slides
83 to 100 ASAP*

*If you have
started but it
doesn't show here
make sure you
can run your
myscript file from
allscripts as the
cis90 user.*

Make backup copies of your script

modify, debug, modify, debug, ... rest

```
/home/cis90/simben/bin $ cp myscript myscript.v1
```

modify, debug, modify, debug, ... rest

```
/home/cis90/simben/bin $ cp myscript myscript.v2
```

modify, debug, modify, debug, ... rest

```
/home/cis90/simben/bin $ cp myscript myscript.v3
```

Fall 2015 Linux Classes and Prerequisites

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.

Transfer Credit: CSU.

Section	Days	Times	Units	Instructor	Room
89005	W	01:00PM-04:05PM	3.00	R.Simms	OL
&	Arr.	Arr.		R.Simms	OL

Section 89005 is an ONLINE course. Meets weekly throughout the semester online during the scheduled times by remote technology with an additional 50 min online lab per week. For details, see instructor's web page at go.cabrillo.edu/online.

89006	W	01:00PM-04:05PM	3.00	R.Simms	828
&	Arr.	Arr.		R.Simms	OL

Section 89006 is a Hybrid ONLINE course. Meets weekly throughout the semester at the scheduled times with an additional 50 min online lab per week. For details, see instructor's web page at go.cabrillo.edu/online.

CIS 191AB UNIX/Linux Installation, Configuration and Administration

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

Section	Days	Times	Units	Instructor	Room
88994	Arr.	Arr.	4.00	M.Matera	OL

Section 88994 is an ONLINE course. For details, see instructor's web page at go.cabrillo.edu/online.

88995	TH	01:00PM-05:05PM	4.00	M.Matera	828
&	Arr.	Arr.		M.Matera	OL

Section 88995 is a Hybrid ONLINE course. Meets weekly throughout the semester at the scheduled times with an additional 50 min online lab per week. For details, see instructor's web page at go.cabrillo.edu/online.

CIS 81 Networking Fundamentals and Theory (Cisco CCNA 1)

Presents networking protocols, standards, concepts, and terminology including Ethernet, ARP, ICMP, IP addressing, subnetting, switches, hubs, routers, TCP, UDP, OSI Model and other standards and protocols. Hybrid Requisite: Completion of or concurrent enrollment in CIS 72. Recommended Preparation: Eligibility for MATH 154.

Transfer Credit: CSU.

Section	Days	Times	Units	Instructor	Room
89002	M	09:30AM-01:35PM	4.00	R.Graziani	828
&	Arr.	Arr.		R.Graziani	OL

Section 89002 is a Hybrid ONLINE course. Meets weekly throughout the semester at the scheduled times with an additional 50 min online lab per week. Students will be required to show that they meet the course prerequisites. For details, see instructor's web page at go.cabrillo.edu/online.

CIS 81 is a prerequisite to CIS 192 Linux Network Administration offered next spring

Monitoring your grades

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

The CIS 90 website

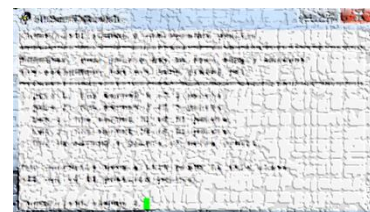


*Send me your
survey to get your
LOR code name.*

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

Or on Opus

checkgrades *codename*
(where *codename* is your LOR codename)

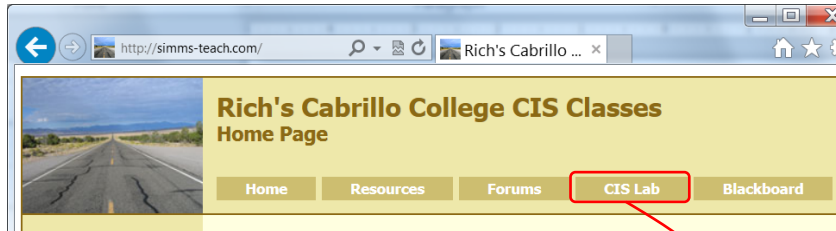


*The checkgrades script was written by
Jessie a past CIS 90 Alumnus*

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

*At the end of the term I'll add up all
your points and assign you a grade
using this table*

Want some help working the labs?



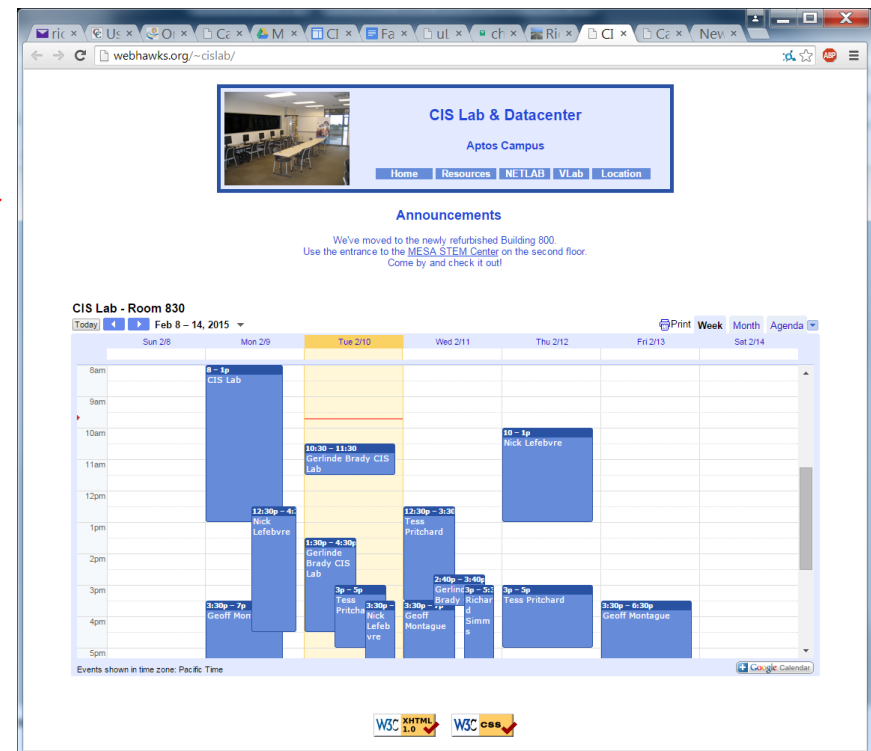
If you would like some additional come over to the CIS Lab. There are student lab assistants and instructors there to help you.

Nick, Sean, and Geoff are CIS 90 Alumni.

Tess and Mike F. are in our class!

Michael M. is the other Linux instructor.

I'm in there Wednesdays 3:00-5:30pm.



CIS 90 Tutoring Available

<http://www.cabrillo.edu/services/tutorials/>

TUTORIALS

ANNOUNCEMENTS & DEADLINES

- New subjects for Spring 2014:
- American Sign Language
- Computer Applications/Business Technology (CABT)
- Computer and Information Systems (CIS)
- History 17A

Welcome to the Tutorials Center!

We offer **FREE** peer tutoring to Cabrillo students who are enrolled in the course/s for which they need help.

- Tutoring is by appointment. The days and times of tutoring sessions are established by the office.
- Sessions are weekly and for the duration of the semester.
- Tutoring sessions are scheduled in small groups. Sessions last 1-2 hours depending on the class. Occasionally, sessions may be one to one but that is not guaranteed.
- Come directly to the TC office to schedule (second floor of library).

The following classes are being tutored for Spring 2014:

- Accounting 1A, 1B, 6, 54A, 151A, 159, 163
- American Sign Language (ASL) 1, 2
- Biology 4, 5, 6
- Computer Applications/Business Technology (CABT) 31, 38, 41, 101, 157, 160
- Computer and Information Systems (CIS) 81, 90, 172**
- Chemistry 1A, 1B, 2, 30A, 30B, 32

CONTACT INFORMATION

Tutorials Center

Location Room 1080A - Learning Resource Center

Phone 831.479.6470

Email tutorialscenter@cabrillo.edu

Coordinator Lori Chavez

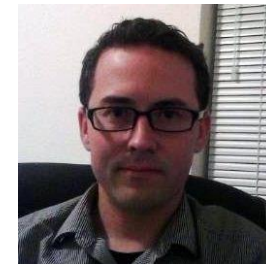
Phone 831.479.6126

Email lochavez@cabrillo.edu

Hours Monday - Thursday: 9am - 5pm
Friday: 9am - 1pm

MAP, DIRECTIONS, & PARKING

DEPARTMENT STAFF & FACULTY DIRECTORY



Geoffrey Montague

All students interested in tutoring need to come directly to the Tutorials Center to schedule, register and fill out some paperwork. This is just a one-time visit.

The tutoring will take place at the STEM center.

More CIS 90 Tutoring Available



The screenshot shows a web browser window displaying a phpBB forum page. The browser's address bar shows the URL: `oslab.cis.cabrillo.edu/forum/viewtopic.php?f=110&t=3676&sid=3d8d3adae964ae2c092e814ffc8c`. The forum header is blue and contains the phpBB logo, the forum title "Cabrillo College: Computer and Information Systems", and a search bar. Below the header, there are navigation links for "Quick links", "FAQ", "Register", and "Login". The breadcrumb trail indicates the current location: "Board index < Cabrillo College Spring 2015 Courses < CIS 90 - Spring 2015". The main topic is "Tutoring Available", with 2 posts on page 1 of 1. The post is by "Takashi Tamasu" and was made on "Wed Mar 11, 2015 9:45 am". The post content states that the user is the Alpha Gamma Sigma tutoring coordinator and offers free tutoring to students in exchange for service points. A link to a Google Form is provided at the bottom of the post.

oslab.cis.cabrillo.edu/forum/viewtopic.php?f=110&t=3676&sid=3d8d3adae964ae2c092e814ffc8c

phpBB® creating communities

Cabrillo College: Computer and Information Systems

Forum for students in the Computer Networking and System Administration and/or Computer Support Specialist programs

Search...

Quick links FAQ Register Login

Board index < Cabrillo College Spring 2015 Courses < CIS 90 - Spring 2015

Tutoring Available

Post Reply Search this topic... 2 posts • Page 1 of 1

by **Takashi Tamasu** » Wed Mar 11, 2015 9:45 am

Hi all,

I am the Alpha Gamma Sigma tutoring coordinator and there are free tutoring available for your class.

As a campus community service, AGS students tutor other Cabrillo Students FREE of charge. In exchange for their time and energy, tutors receive service points towards their AGS membership requirement and awards.

There are paper forms next to the AGS inbox or you can do it online via <http://goo.gl/forms/SHHfZk5c8f>

Takashi Tamasu

Posts: 105
Joined: Wed Jan 29, 2014 2:46 pm

Final Exam

Final Exam

Test #3 (final exam) is **MONDAY** May 18 7-9:50AM

Monday	5/18	<p>Test #3 (the final exam)</p> <p>Time</p> <ul style="list-style-type: none"> 7:00AM - 9:50AM in Room 828 <p>Materials</p> <ul style="list-style-type: none"> Test (blackboard) <p>CCC Confer</p> <ul style="list-style-type: none"> Enter virtual classroom Class archives 		<p><u>5 posts</u> <u>Lab X1</u> <u>Lab X2</u></p>
---------------	------	--	--	---

*Extra credit
labs and
final posts
due by
11:59PM*

- All students will take the test at the same time. The test must be completed by 9:50AM.
- Working and long distance students can take the test online via CCC Confer and BlackBoard.
- Working students will need to plan ahead to take time off from work for the test.

Final Exam (Test #3)

- **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 (Test #3)

- **Blackboard Practice Test 3**

- Advice:

- ❖ Work EVERY question on the practice test and make a personal reference sheet for remembering how to do things
 - ❖ Use your reference sheet on the final exam.
 - ❖ Take the practice test more than once. Use the **restore** command to reset your directory on the testing system
- Use of study groups and the forum are a great way to work on the practice test and prepare for the final exam!

Test Tips

Practice Test



**Do the practice test
multiple times.**

**Use the restore command
for a fresh start.**

Test Tips

Practice Test

Screen Layout

Resize Blackboard to show just one question at a time

The screenshot shows the Blackboard interface for Cabrillo College. The top navigation bar includes 'My Cabrillo Blackboard', 'Courses', and 'My Career'. The left sidebar contains links for 'SafeAssign', 'Self and Peer Assessment', 'Send Email', 'Send Two-Way SMS', 'Tasks', 'Tests, Surveys, and Pools', 'Wikis', and 'WileyPLUS'. The main content area displays 'QUESTION 1' with a '2 points' value and a 'Save Answer' button. The question text reads: 'Operation: Unless directed otherwise use Sun-Hwa-P3 to answer each question on this test. Let's get started! Log into Sun-Hwa-P3 and run the flag command. Question: What output do you get from this command?'. Below the question is a text input field with a rich text editor toolbar. A red box highlights the 'Toggle expand/shrink icon' in the toolbar. Two terminal windows are open at the bottom. The left terminal shows the output of the 'flag' command, displaying a ASCII art of a cat and a poem. The right terminal shows the output of the 'check' script, displaying 'Checking OPERATION 1', '.flag file found -- OK', and 'Review: Verify the .flag file found'.

Toggle expand/shrink icon to minimize number of formatting icons

Note: You can copy and paste text from your session into Blackboard if needed

One session to work the questions in

Another session to run the check script in, show specs, send signals etc.

Test Tips

Use the -v (verbose option) to double check your work

The -v (verbose) option

```
[rsimms@oslab ~]$ mkdir fun
```

```
[rsimms@oslab ~]$ touch fun/funny
```

```
[rsimms@oslab ~]$ chmod -R 700 fun
```

```
[rsimms@oslab ~]$ chmod -Rv 750 fun
```

```
mode of `fun' changed to 0750 (rwxr-x---)
```

```
mode of `fun/funny' changed to 0750 (rwxr-x---)
```

```
[rsimms@oslab ~]$ touch dog cat
```

```
[rsimms@oslab ~]$ mv dog fun
```

```
[rsimms@oslab ~]$ mv -v cat fun
```

```
`cat' -> `fun/cat'
```

Notice how using the -v option gives you additional feedback

Test Tips

head and tail pipelines
grep -n

Sample Task

Find a block of text in a large file that contains a specific text string. Then write a script that display the block of text.

Examine the *dickens* file in the */home/cis90/depot* directory and find the block of lines containing this quote:

"Father is so much kinder than he used to be"

In the dickens file, which line number contains the quote above?

Write your answer in the chat window

One way: use grep to find the quote in the file

Use grep to find the quote in the file

```
/home/cis90/simben $ grep "much kinder" ../depot/dickens  
for ever and ever. Father is so much kinder than he used to be, that
```

The -n option on grep shows the line number

```
/home/cis90/simben $ grep -n "much kinder" ../depot/dickens  
305:for ever and ever. Father is so much kinder than he used to be, that
```

Using grep we see that the quote is on line 305 of the dickens file

Use vi to view the block of lines containing the quote

```
vi ../depot/dickens
```

```
simben90@oslab:~
It opened; and a little girl, much younger than the boy, came darting in,
and putting her arms about his neck, and often kissing him, addressed
him as her "Dear, dear brother."

"I have come to bring you home, dear brother!" said the child, clapping
her tiny hands, and bending down to laugh. "To bring you home, home,
home!"

"Home, little Fan?" returned the boy.

"Yes!" said the child, brimful of glee. "Home, for good and all. Home,
for ever and ever. Father is so much kinder than he used to be, that
home's like Heaven! He spoke so gently to me one dear night when I
was going to bed, that I was not afraid to ask him once more if you
might come home; and he said Yes, you should; and sent me in a coach to
bring you. And you're to be a man!" said the child, opening her eyes,
"and are never to come back here; but first, we're to be together all
the Christmas long, and have the merriest time in all the world."

"You are quite a woman, little Fan!" exclaimed the boy.

She clapped her hands and laughed, and tried to touch his head; but being
too little, laughed again, and stood on tiptoe to embrace him. Then she
```

305,19 43%

For a script to output the circled block of text above we must determine the line numbers of the start and end of the block

Starts on
line 304

```
simben90@oslab:~
It opened; and a little girl, much younger than the boy, came darting in,
and putting her arms about his neck, and often kissing him, addressed
him as her "Dear, dear brother."

"I have come to bring you home, dear brother!" said the child, clapping
her tiny hands, and bending down to laugh. "To bring you home, home,
home!"

"Home, little Fan?" returned the boy.

Yes!" said the child, brimful of glee. "Home, for good and all. Home,
for ever and ever. Father is so much kinder than he used to be, that
home's like Heaven! He spoke so gently to me one dear night when I
```

Ends on
line 311

```
simben90@oslab:~
It opened; and a little girl, much younger than the boy, came darting in,
and putting her arms about his neck, and often kissing him, addressed
him as her "Dear, dear brother."

"I have come to bring you home, dear brother!" said the child, clapping
her tiny hands, and bending down to laugh. "To bring you home, home,
home!"

"Home, little Fan?" returned the boy.

"Yes!" said the child, brimful of glee. "Home, for good and all. Home,
for ever and ever. Father is so much kinder than he used to be, that
home's like Heaven! He spoke so gently to me one dear night when I
was going to bed, that I was not afraid to ask him once more if you
might come home; and he said Yes, you should; and sent me in a coach to
bring you. And you're to be a man!" said the child, opening her eyes,
"and are never to come back here; but first, we're to be together all
the Christmas long, and have the merriest time in all the world."

"You are quite a woman, little Fan!" exclaimed the boy.

She clapped her hands and laughed, and tried to touch his head; but being
too little, laughed again, and stood on tiptoe to embrace him. Then she
```

304,1

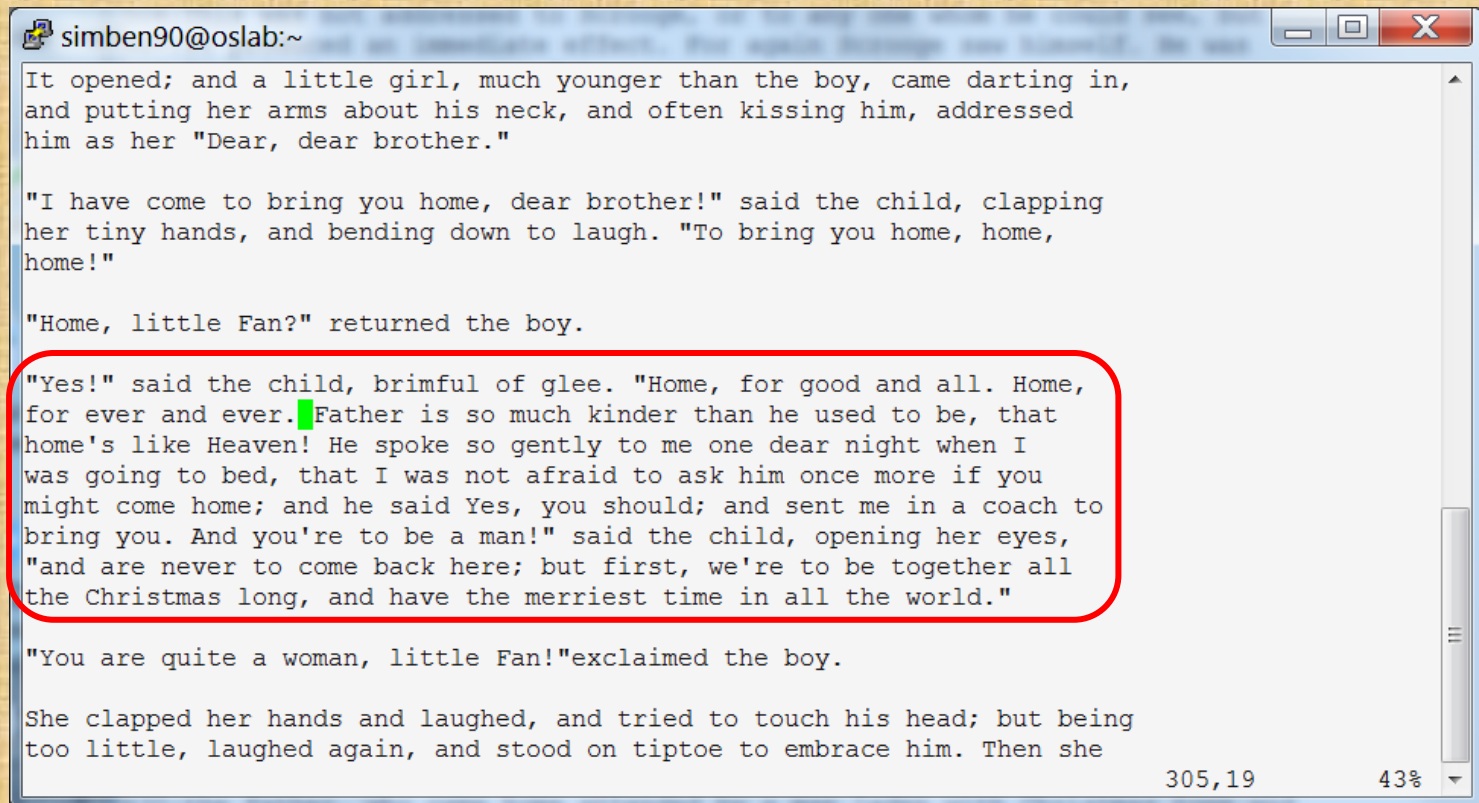
311,1

43%

43%

Just move the cursor in vi and the line number in the lower right changes

/home/cis90/depot/dickens



A terminal window titled 'simben90@oslab:~' displays text from Charles Dickens' 'A Christmas Carol'. The text is as follows:

```
It opened; and a little girl, much younger than the boy, came darting in,
and putting her arms about his neck, and often kissing him, addressed
him as her "Dear, dear brother."

"I have come to bring you home, dear brother!" said the child, clapping
her tiny hands, and bending down to laugh. "To bring you home, home,
home!"

"Home, little Fan?" returned the boy.

"Yes!" said the child, brimful of glee. "Home, for good and all. Home,
for ever and ever. Father is so much kinder than he used to be, that
home's like Heaven! He spoke so gently to me one dear night when I
was going to bed, that I was not afraid to ask him once more if you
might come home; and he said Yes, you should; and sent me in a coach to
bring you. And you're to be a man!" said the child, opening her eyes,
"and are never to come back here; but first, we're to be together all
the Christmas long, and have the merriest time in all the world."

"You are quite a woman, little Fan!" exclaimed the boy.

She clapped her hands and laughed, and tried to touch his head; but being
too little, laughed again, and stood on tiptoe to embrace him. Then she
```

The terminal window shows a cursor at the end of the last line of text. The bottom right corner of the window displays '305,19' and '43%'.

*Starts on
line 304*

*Ends on
line 311*

*What pipeline command using head and tail would print
just the block of text above?*

Write your answer in the chat window

*The last line of
the block is 311*

*The number of lines in
the block would be
 $311 - 304 + 1$
or 8 lines*

```
/home/cis90/simben $ head -n311 ../depot/dickens | tail -n8
"Yes!" said the child, brimful of glee. "Home, for good and all. Home,
for ever and ever. Father is so much kinder than he used to be, that
home's like Heaven! He spoke so gently to me one dear night when I
was going to bed, that I was not afraid to ask him once more if you
might come home; and he said Yes, you should; and sent me in a coach to
bring you. And you're to be a man!" said the child, opening her eyes,
"and are never to come back here; but first, we're to be together all
the Christmas long, and have the merriest time in all the world."
/home/cis90/simben $
```

*This is how you would use a head and tail pipeline to print just
the block of text in the file containing the quote*



```
/home/cis90/simben $ head -n311 ../depot/dickens | tail -n8
```

```
"Yes!" said the child, brimful of glee. "Home, for good and all. Home,  
for ever and ever. Father is so much kinder than he used to be, that  
home's like Heaven! He spoke so gently to me one dear night when I  
was going to bed, that I was not afraid to ask him once more if you  
might come home; and he said Yes, you should; and sent me in a coach to  
bring you. And you're to be a man!" said the child, opening her eyes,  
"and are never to come back here; but first, we're to be together all  
the Christmas long, and have the merriest time in all the world."  
/home/cis90/simben $
```

Let's now make that long command into a script named dickens101

```
/home/cis90/simben $ vi dickens101
/home/cis90/simben $ cat dickens101
head -n311 ../depot/dickens | tail -n8
```

```
/home/cis90/simben $ chmod +x dickens101
/home/cis90/simben $ dickens101
```

"Yes!" said the child, brimful of glee. "Home, for good and all. Home, for ever and ever. Father is so much kinder than he used to be, that home's like Heaven! He spoke so gently to me one dear night when I was going to bed, that I was not afraid to ask him once more if you might come home; and he said Yes, you should; and sent me in a coach to bring you. And you're to be a man!" said the child, opening her eyes, "and are never to come back here; but first, we're to be together all the Christmas long, and have the merriest time in all the world."

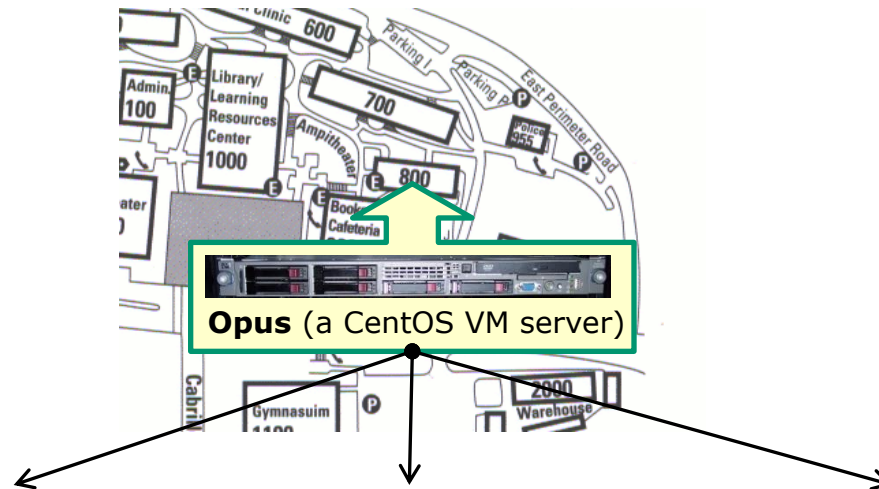
```
/home/cis90/simben $
```

Now we have a one-line script to print the block of text containing the quote

More on file transfer

File Transfer

Downloading your Opus files to your home computer



Windows



Mac



Linux



Many ways to transfer files:

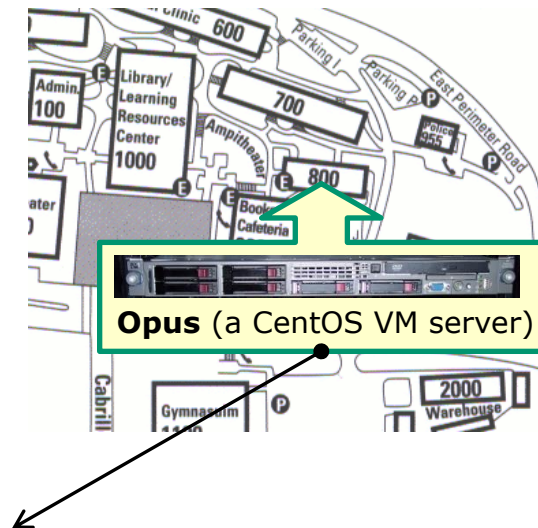
- Between Linux and Windows
 - **Filezilla** or related applications
 - Putty SCP (**PSCP**)
- Between Linux and Linux/Mac
 - **Filezilla** or related applications
 - **scp** command

File Transfer To Windows

FileZilla

File Transfer

Downloading your Opus files to your home computer



Windows

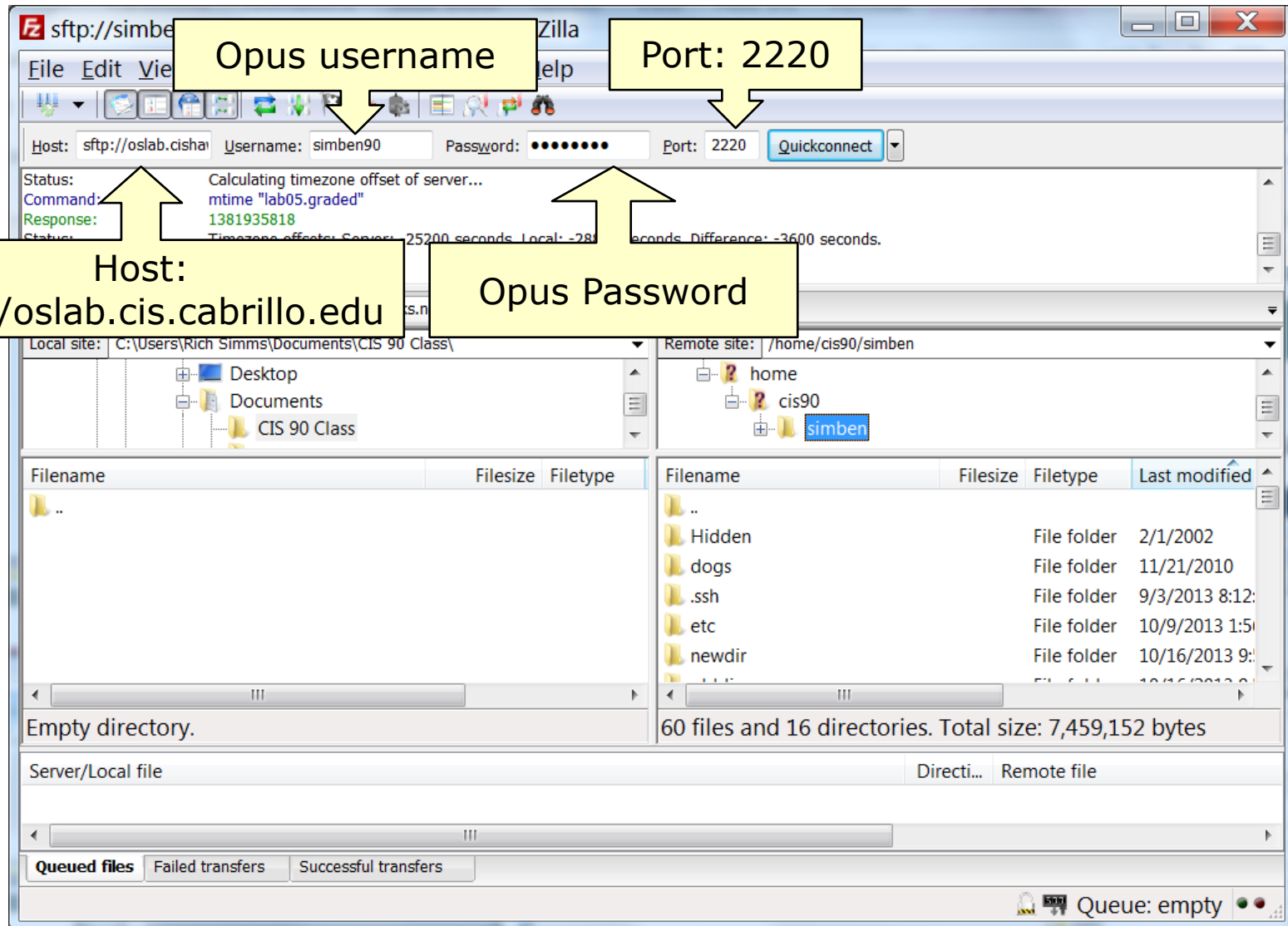
Using  FileZilla

File Transfer

<http://filezilla-project.org>



FileZilla On Windows, connect to your Opus



FileZilla Select destination and source directories

The screenshot shows the FileZilla client interface. The top menu bar includes File, Edit, View, Transfer, Server, Bookmarks, and Help. Below the menu is a toolbar with various icons. The connection bar shows the host as sftp://oslab.cishawks.net:2220, username as simben90, and a masked password. The status bar at the bottom shows 'Queue: empty'.

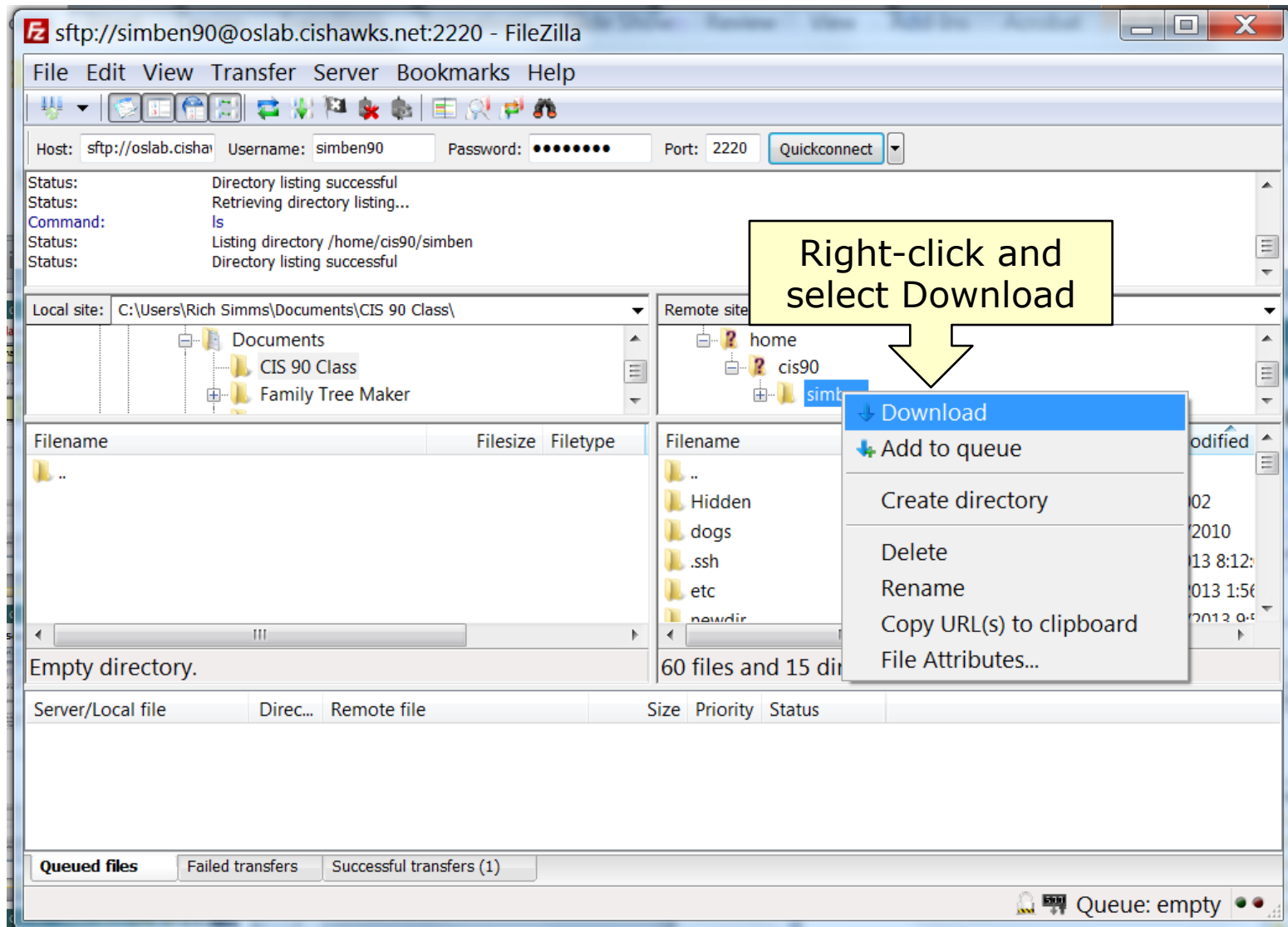
Two yellow callout boxes with arrows point to specific fields in the interface:

- As destination select a local folder:** An arrow points to the local site path field, which contains `C:\Users\Rich Simms\Documents\CIS 90 Class\`.
- As source select your home directory (on Opus):** An arrow points to the remote site path field, which contains `/home/cis90/simben`.

The interface also displays a directory listing for the remote site, showing folders like `home`, `cis90`, and `simben`. The status bar at the bottom indicates 'Empty directory.' and '60 files and 16 directories. Total size: 7,459,152 bytes'.

Files are downloaded from the source directory to the destination directory

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 a list of files and directories. A yellow box highlights the text: "And away it goes downloading every file and directory it finds in the selected Opus directory to your local Windows destination folder". The bottom status bar shows the transfer progress of bin.tar (71,680 bytes, 45.7% completed) and lab04.g... (3,282 bytes).

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

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

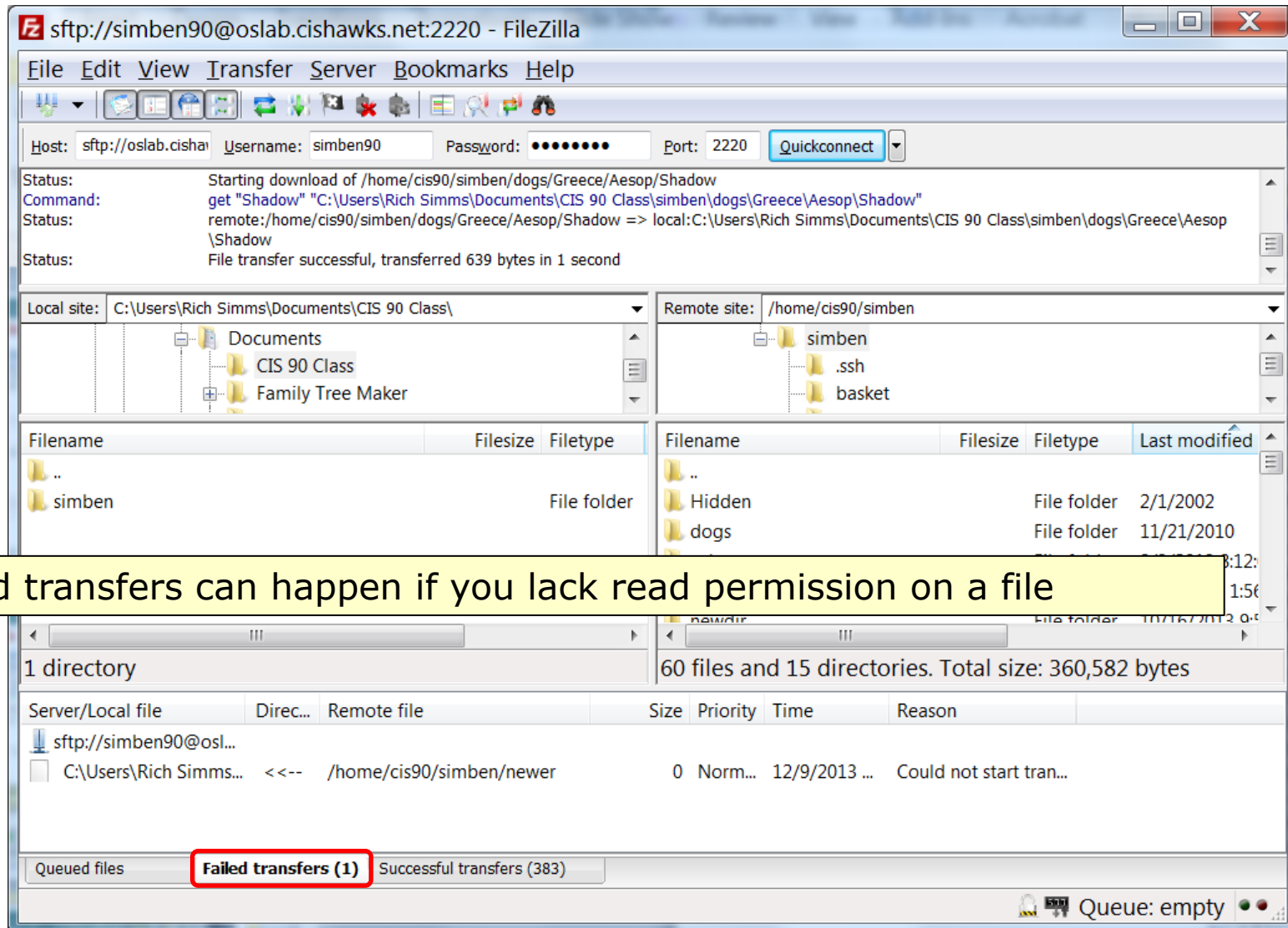
And away it goes downloading every file and directory it finds in the selected Opus directory to your local Windows destination folder

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

FileZilla 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	
Hidden		File folder	2/1/2002
dogs		File folder	11/21/2010

1 directory

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

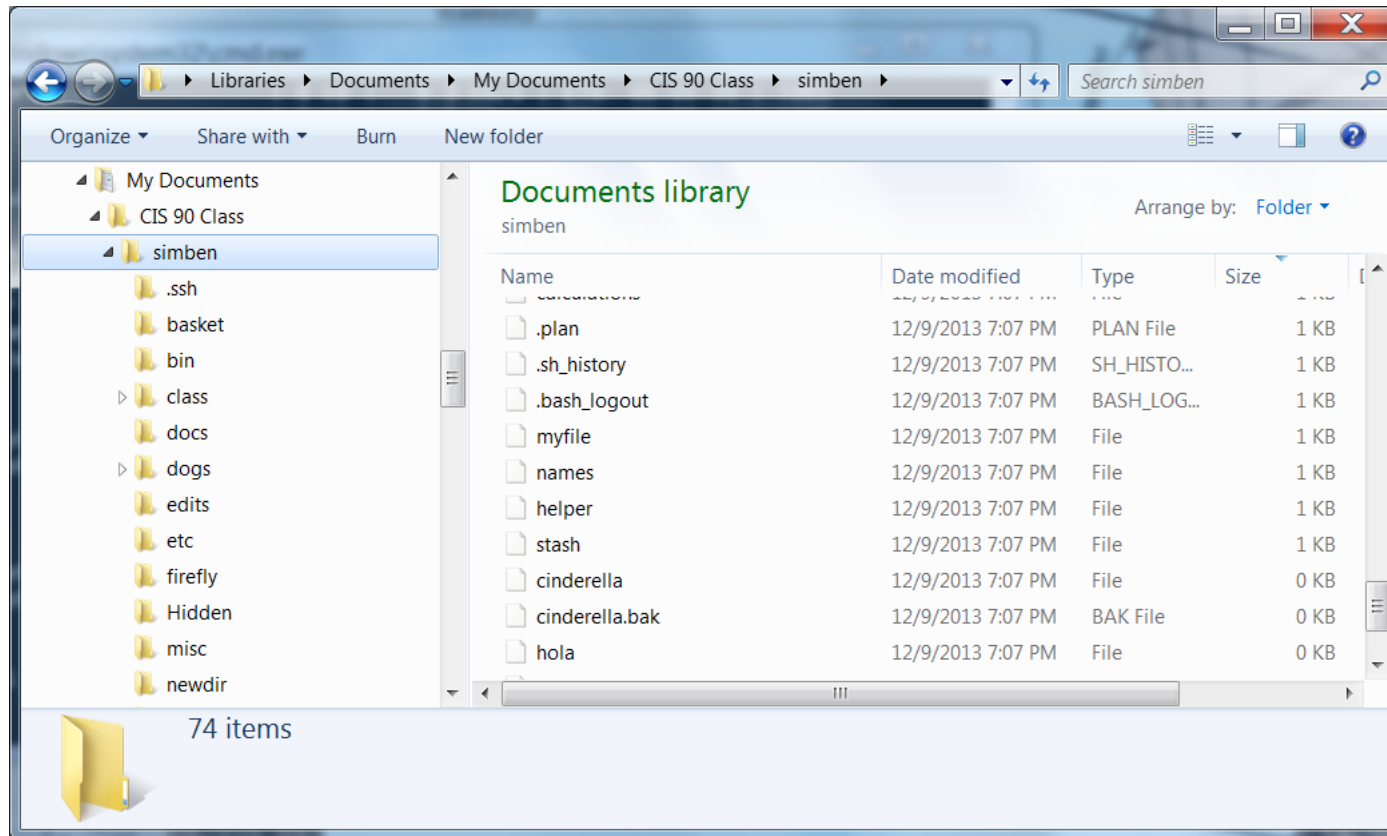
Server/Local file	Dir...	Remote file	Size	Priority	Time	Reason
sftp://simben90@osl...						
C:\Users\Rich Simms...	<<--	/home/cis90/simben/newer	0	Norm...	12/9/2013 ...	Could not start tran...

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

Queue: empty

File transfers

Your CIS 90 home directory files are
now on Windows



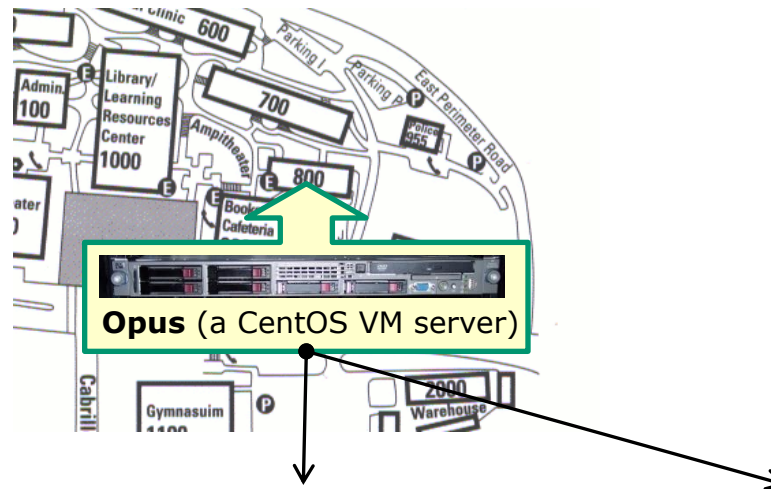
Empty files are copied as well

File Transfer Linux or Mac

scp

File Transfer

Downloading your Opus files to your home computer



Mac



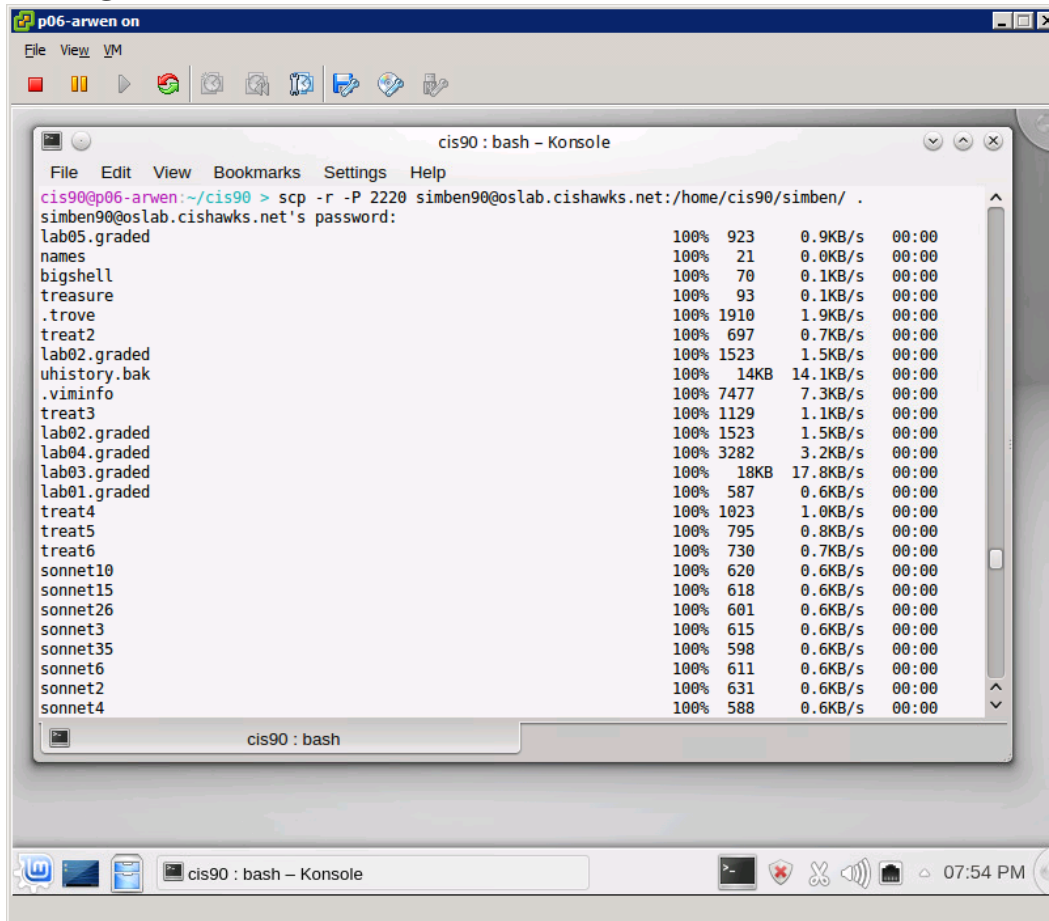
Linux

File Transfer

Downloading your Opus files to a Linux Mint VM

```
scp -P 2220 -r simben90@oslab.cis.cabrillo.edu:/home/cis90/simben .
```

Arwen



*Source
directory on
Opus*

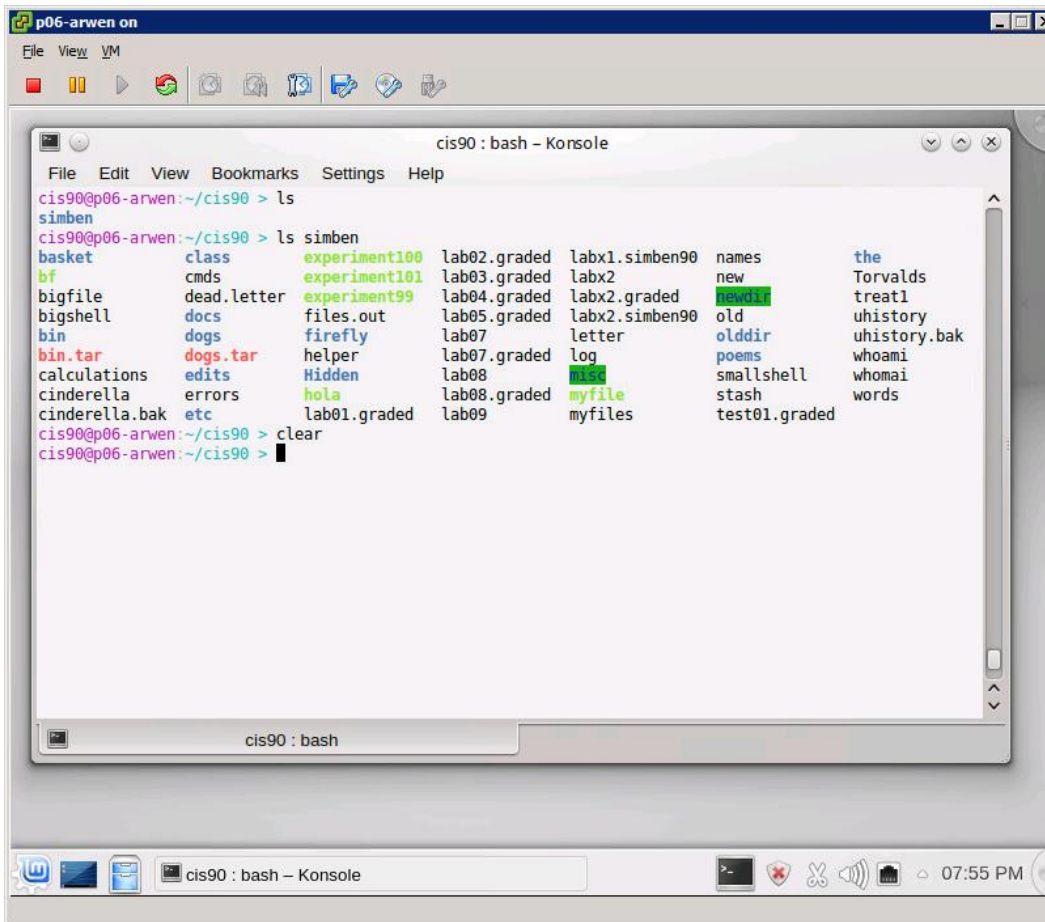
*Destination
directory on
Arwen*

Files lacking read
permission generate
an error and are not
copied

Empty files are copied
as well

File Transfer

Downloading your Opus files to a Linux Mint VM



The screenshot shows a Linux Mint VM window titled "p06-arwen on". Inside the VM, a terminal window titled "cis90 : bash - Konsole" displays the output of a file transfer command. The output lists various files and directories, including "simben", "basket", "bf", "bigfile", "bigshell", "bin", "bin.tar", "calculations", "cinderella", "cinderella.bak", "etc", "experiment100", "experiment101", "experiment99", "files.out", "firefly", "helper", "Hidden", "hola", "lab01.graded", "lab02.graded", "lab03.graded", "lab04.graded", "lab05.graded", "lab07.graded", "lab08", "lab08.graded", "lab09", "labx1.simben90", "labx2", "labx2.graded", "labx2.simben90", "letter", "log", "myfile", "myfiles", "names", "new", "newdir", "old", "olddir", "poems", "smallshell", "stash", "test01.graded", "the", "Torvalds", "treat1", "uhistory", "uhistory.bak", "whoami", "whomai", and "words". The terminal prompt is "cis90@p06-arwen:~/cis90 >".

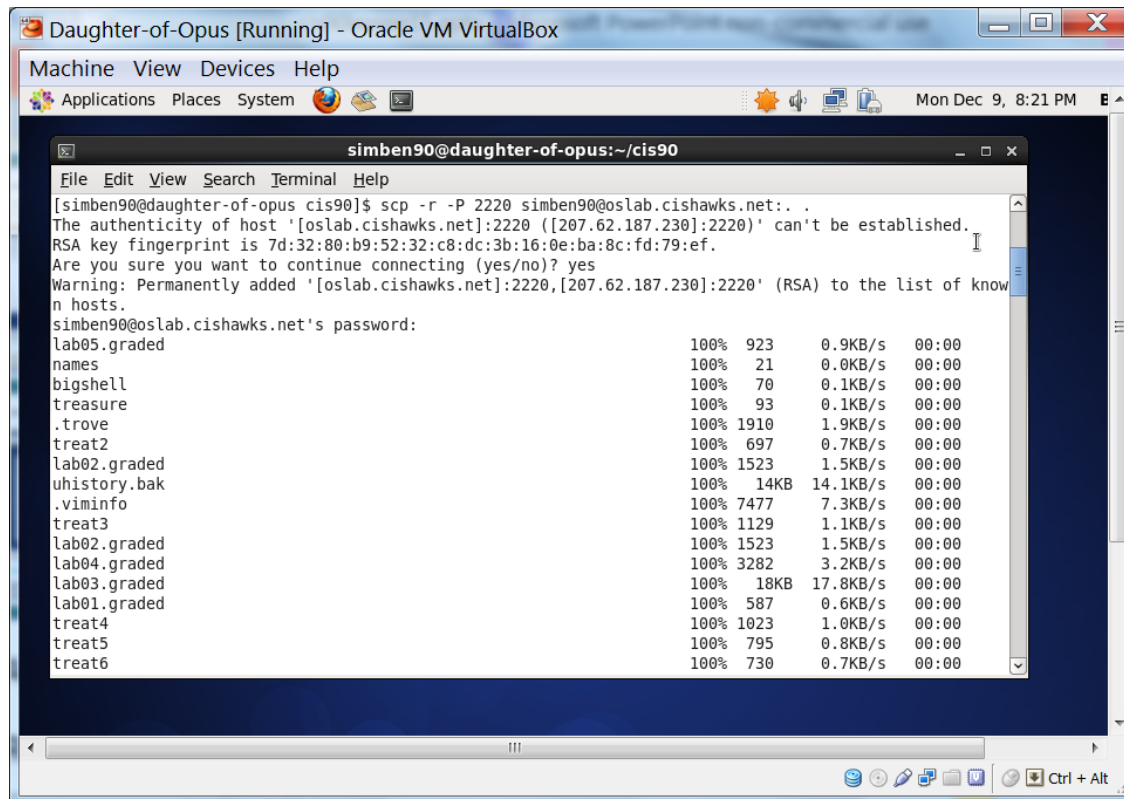
Now your Opus CIS 90 files are on the VM

File Transfer

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

```
scp -P 2220 -r simben90@oslab.cis.cabrillo.edu:.. .
```

Daughter-of-Opus



*Source
directory on
Opus*

*Destination
directory on
Daughter-of-
Opus*

File Transfer

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

```

simben90@daughter-of-opus:~/cis90
File Edit View Search Terminal Help
[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
[simben90@daughter-of-opus cis90]$
  
```

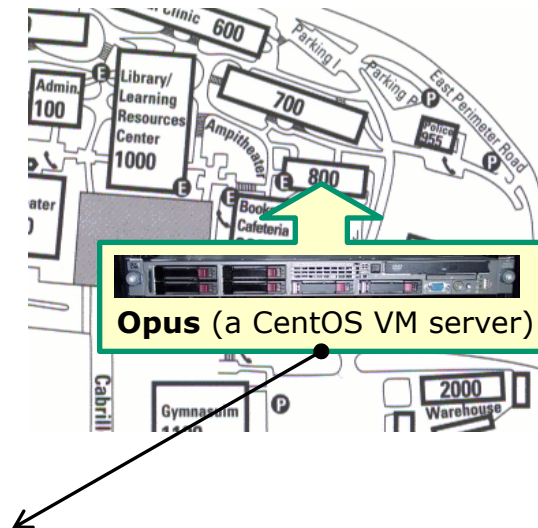
CIS 90 files copied from Opus to home Linux system

File Transfer To Windows

PSCP

File Transfer

Downloading your Opus files to your home computer



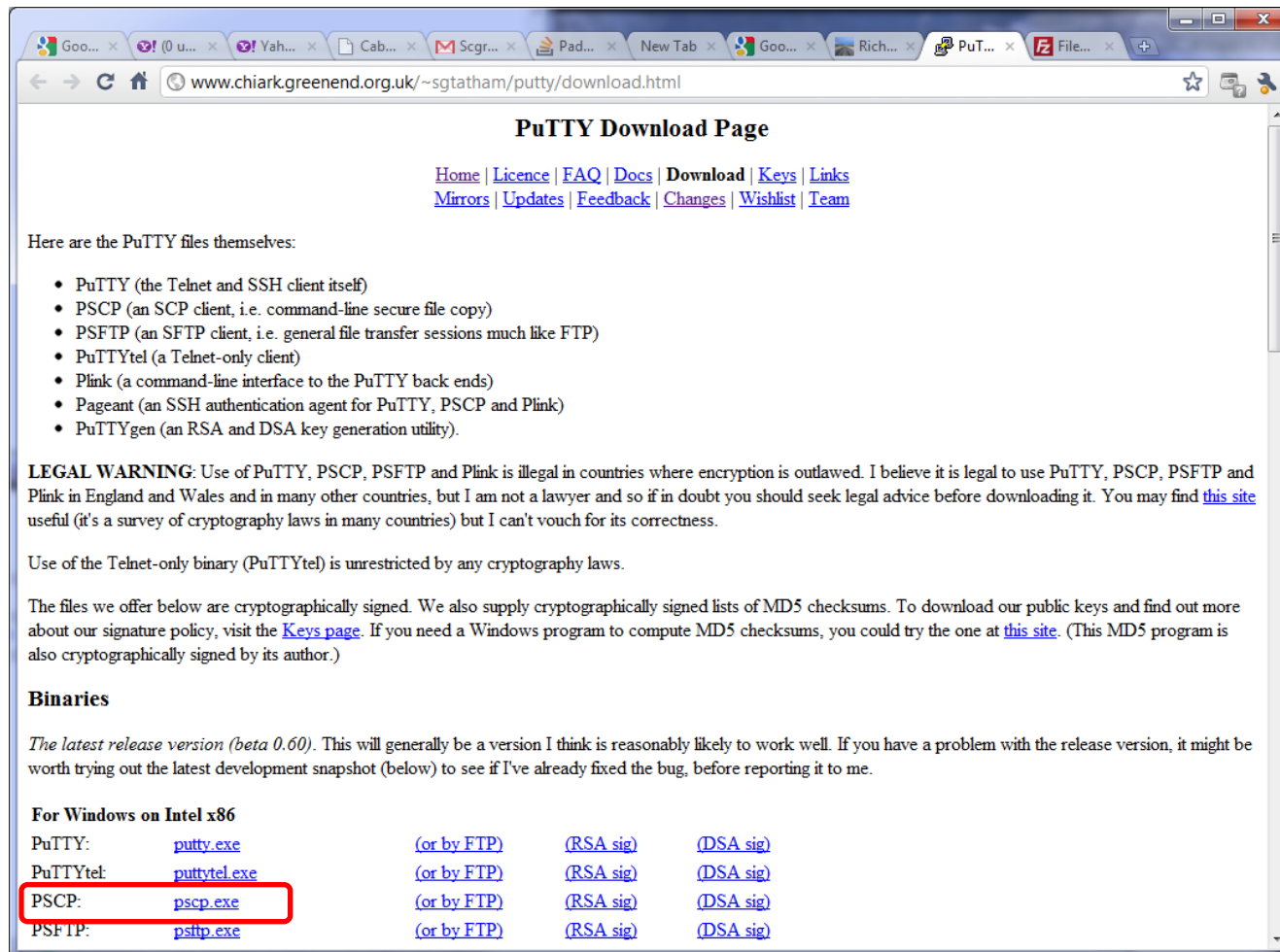
Windows

Using PSCP

PSCP (Putty SCP)

Downloading

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



The screenshot shows a web browser window with the address bar displaying www.chiark.greenend.org.uk/~sgtatham/putty/download.html. The page title is "PuTTY Download Page". Below the title is a navigation menu with 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 software components: 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 is a "LEGAL WARNING" section stating that use of PuTTY, PSCP, PSFTP, and Plink is illegal in countries where encryption is outlawed, but it is legal in England and Wales. It advises users to seek legal advice if in doubt. A note specifies that the Telnet-only binary (PuTTYtel) is unrestricted by any cryptography laws. The page then explains that the files are cryptographically signed and provides links to the signature policy and a Windows program for computing MD5 checksums. A "Binaries" section follows, stating that the latest release version is beta 0.60. At the bottom, under "For Windows on Intel x86", there is a table listing the download links 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

```

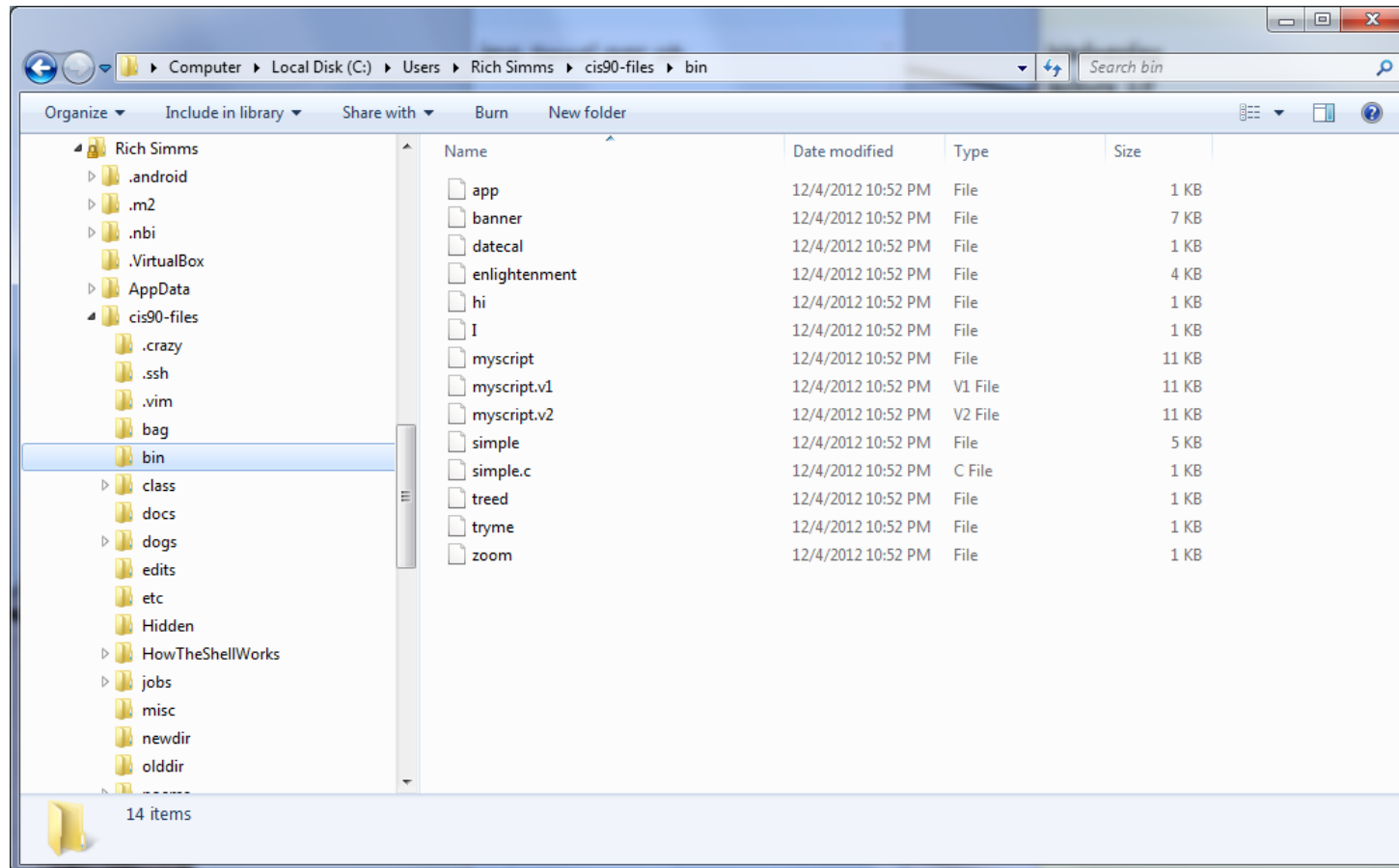
C:\Windows\system32\cmd.exe
Moon          | 1 kB | 1.3 kB/s | ETA: 00:00:00 | 100%
readme        | 0 kB | 0.1 kB/s | ETA: 00:00:00 | 100%
Hamlet        | 0 kB | 0.2 kB/s | ETA: 00:00:00 | 100%
Caesar        | 0 kB | 0.8 kB/s | ETA: 00:00:00 | 100%
Romeo         | 0 kB | 0.8 kB/s | ETA: 00:00:00 | 100%
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

Compressed Archives

gzip and gunzip
tar -z option

gzip and gunzip commands

```
/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
```

*Use **gzip** and **gunzip** to compress and un-compress regular tar files.*

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

tar -z option

```
/home/cis90/simben $ tar cf simben90.tar .  
tar: ./Hidden: Cannot open: Permission denied  
tar: ./simben90.tar: file is the archive; not dumped  
tar: ./newer: Cannot open: Permission denied  
tar: Exiting with failure status due to previous errors
```

```
/home/cis90/simben $ ls -l simben90.tar  
-rw-rw----. 1 simben90 cis90 768000 Dec  9 07:52 simben90.tar  
/home/cis90/simben $
```

```
/home/cis90/simben $ rm simben90.tar  
rm: remove regular file `simben90.tar'? y
```

```
/home/cis90/simben $ tar czf simben90.tar.gz .  
tar: ./Hidden: Cannot open: Permission denied  
tar: ./newer: Cannot open: Permission denied  
tar: Exiting with failure status due to previous errors
```

```
/home/cis90/simben $ ls -l simben90.tar.gz  
-rw-rw----. 1 simben90 cis90 158724 Dec  9 07:51 simben90.tar.gz
```

Use the z option to compress files when creating the tarball

tar -z option

```
/home/cis90/simben $ tar tvzf simben90.tar.gz | head
drwxr-xr-x  simben90/cis90      0 2014-12-09 07:58 ./
-r-----  simben90/staff 1111 2014-10-15 10:09 ./lab05.graded
-rw-r--r--  simben90/cis90   22 2014-10-21 09:25 ./names
-rw-r--r--  simben90/cis90   70 2014-11-02 17:12 ./bigshell
-r-----  simben90/staff 1276 2014-09-17 10:28 ./lab02.graded
-rw-----  simben90/root   410 2014-11-24 07:44 ./bash_profile.fq
-rw-----  simben90/cis90 5146 2014-12-08 19:10 ./viminfo
-rw-----  simben90/cis90  406 2014-11-20 11:49 ./bash_profile.bug
drwx--x---  simben90/cis90    0 2014-10-28 15:48 ./class/
dr-x-wx---  simben90/users    0 2014-10-28 15:48 ./class/labs/
/home/cis90/simben $
```

Use the z option to when extracting or viewing compressed tar files

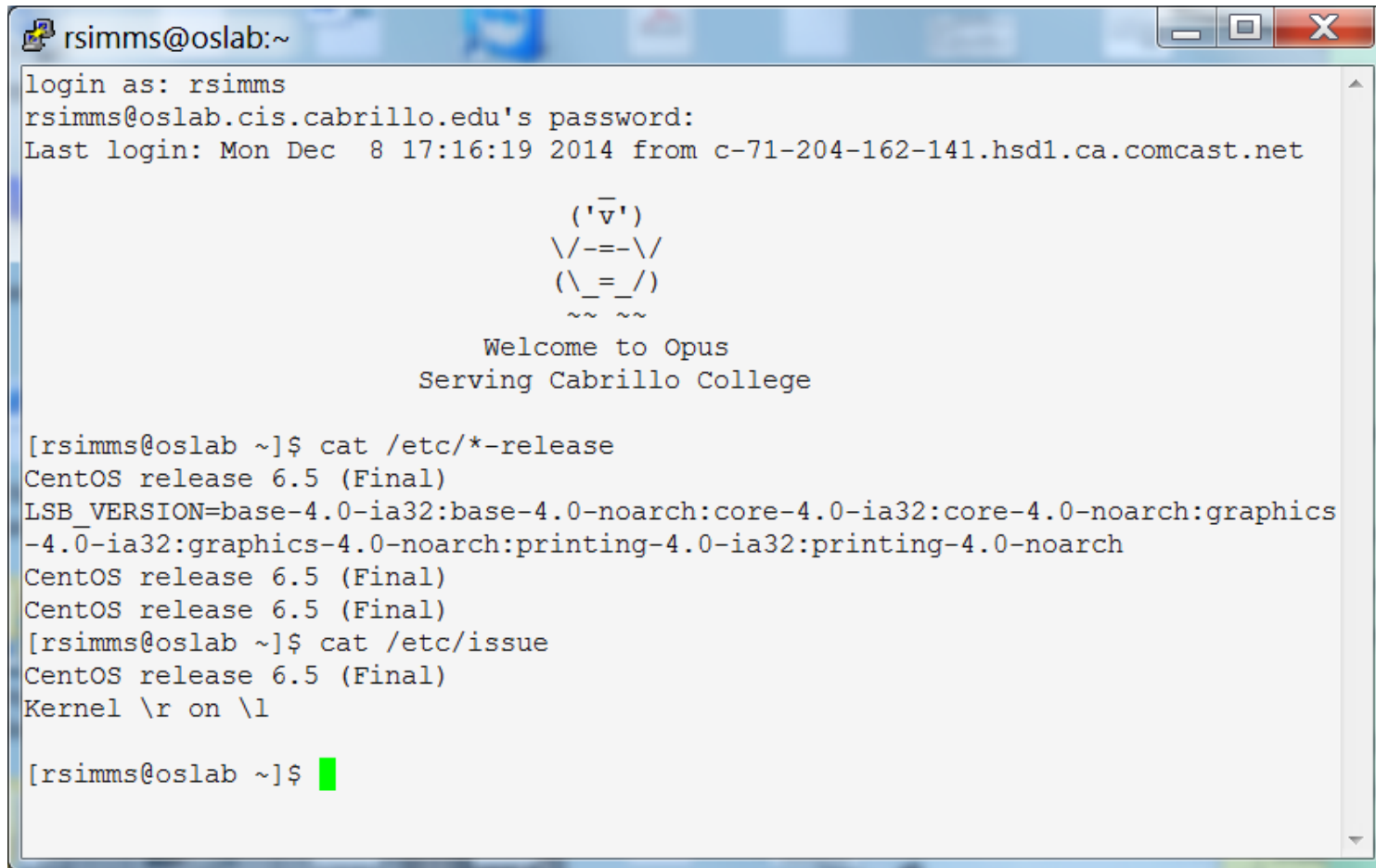
.tar.gz vs .tgz

```
/home/cis90/simben $ tar czf simben90.tar.gz .  
tar: ./Hidden: Cannot open: Permission denied  
tar: .: file changed as we read it  
tar: Exiting with failure status due to previous errors  
/home/cis90/simben $ ls -l simben90.tar.gz  
-rw-rw-r--. 1 simben90 cis90 147319 May 12 20:01 simben90.tar.gz  
/home/cis90/simben $ rm simben90.tar.gz
```

```
/home/cis90/simben $ tar czf simben90.tgz .  
tar: ./Hidden: Cannot open: Permission denied  
tar: .: file changed as we read it  
tar: Exiting with failure status due to previous errors  
/home/cis90/simben $ ls -l simben90.tgz  
-rw-rw-r--. 1 simben90 cis90 147319 May 12 20:01 simben90.tgz  
/home/cis90/simben $ rm simben90.tgz
```

The usage of .tgz and .tar.gz suffixes are equivalent and both indicate the tarball was compressed

Make your own Opus at home



```
rsimms@oslab:~  
login as: rsimms  
rsimms@oslab.cis.cabrillo.edu's password:  
Last login: Mon Dec  8 17:16:19 2014 from c-71-204-162-141.hsd1.ca.comcast.net  
  
      ( 'v' )  
    \ /--\ /  
   ( \ _ _ / )  
     ~ ~ ~ ~  
      Welcome to Opus  
      Serving Cabrillo College  
  
[rsimms@oslab ~]$ cat /etc/*-release  
CentOS release 6.5 (Final)  
LSB_VERSION=base-4.0-ia32:base-4.0-noarch:core-4.0-ia32:core-4.0-noarch:graphics-4.0-ia32:graphics-4.0-noarch:printing-4.0-ia32:printing-4.0-noarch  
CentOS release 6.5 (Final)  
CentOS release 6.5 (Final)  
[rsimms@oslab ~]$ cat /etc/issue  
CentOS release 6.5 (Final)  
Kernel \r on \l  
  
[rsimms@oslab ~]$
```

Ingredients

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

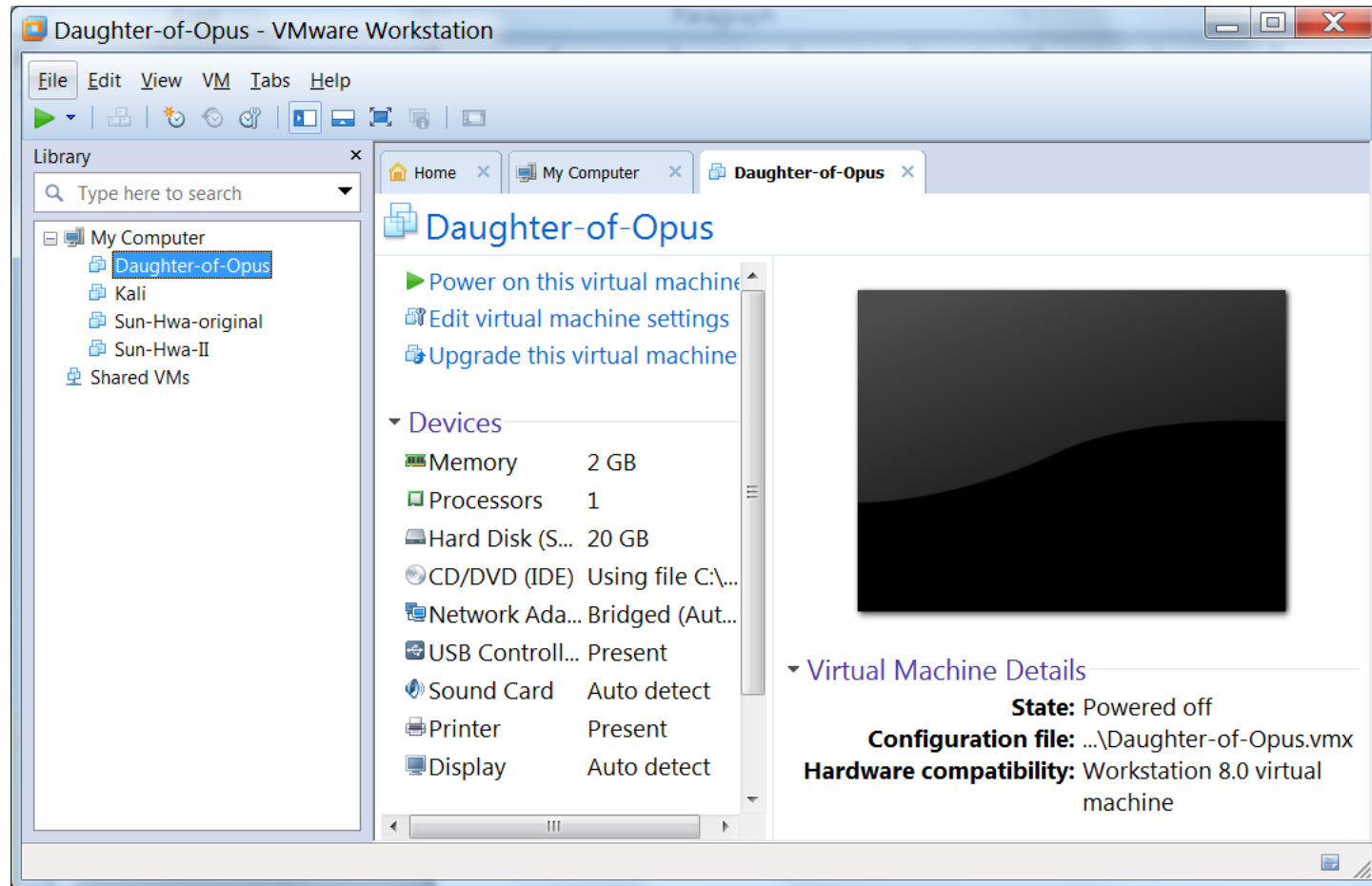
- A CentOS Linux distribution ... price: \$0.00
- Virtualization software
 - For Windows
 - VirtualBox ... price: \$0.00
 - *or* VMware Workstation ... price: \$0.00 (via VMware Academy)
 - For Mac
 - VirtualBox ... price: \$0.00
 - *or* VMware Fusion ... price: \$0.00 (via VMware Academy)
 - For Linux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

The screenshot shows a web browser window with the URL simms-teach.com/resources.php. The browser's address bar and tabs are visible at the top. The website has a navigation bar with links: Home, Resources (highlighted), Forums, CIS Lab, and Blackboard. On the left side, there are links for 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, and Opus Status: UP. The main content area is titled 'Links' and contains several sections:

- Instructors**
 - Programming Master Ed
 - Network Master Gerlinde
 - Programming Master Jeffrey
 - Linux Master Jim
 - Web Master John
 - Systems Master Michael
 - Hardware Master Marcelo
 - Network Master Rick
 - Programming Master Steve
- Getting Linux/UNIX**
 - Linux ISOs** (highlighted)
 - 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
- Academic Software for CIS Students**
 - Microsoft Webstore
 - VMware Webstore** (highlighted)
- Virtualization**
 - VirtualBox** (highlighted)
 - VMware ESXi and vSphere client
- Standards**
- Commands**
 - Practical
 - Command Directory
 - Useful
 - vi summary
 - vi cheat sheet
- Howtos**
 - HowtoForge
 - email
 - DNS
 - Ethernet (NIC drivers)
 - NFS
 - NIS
 - PPP
 - Putty SSH Keys
 - Using sed
- Student Howtos**
 - Logging into Opus from a Mac by Laura Sreckovic and updated by Ann Pike
 - 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

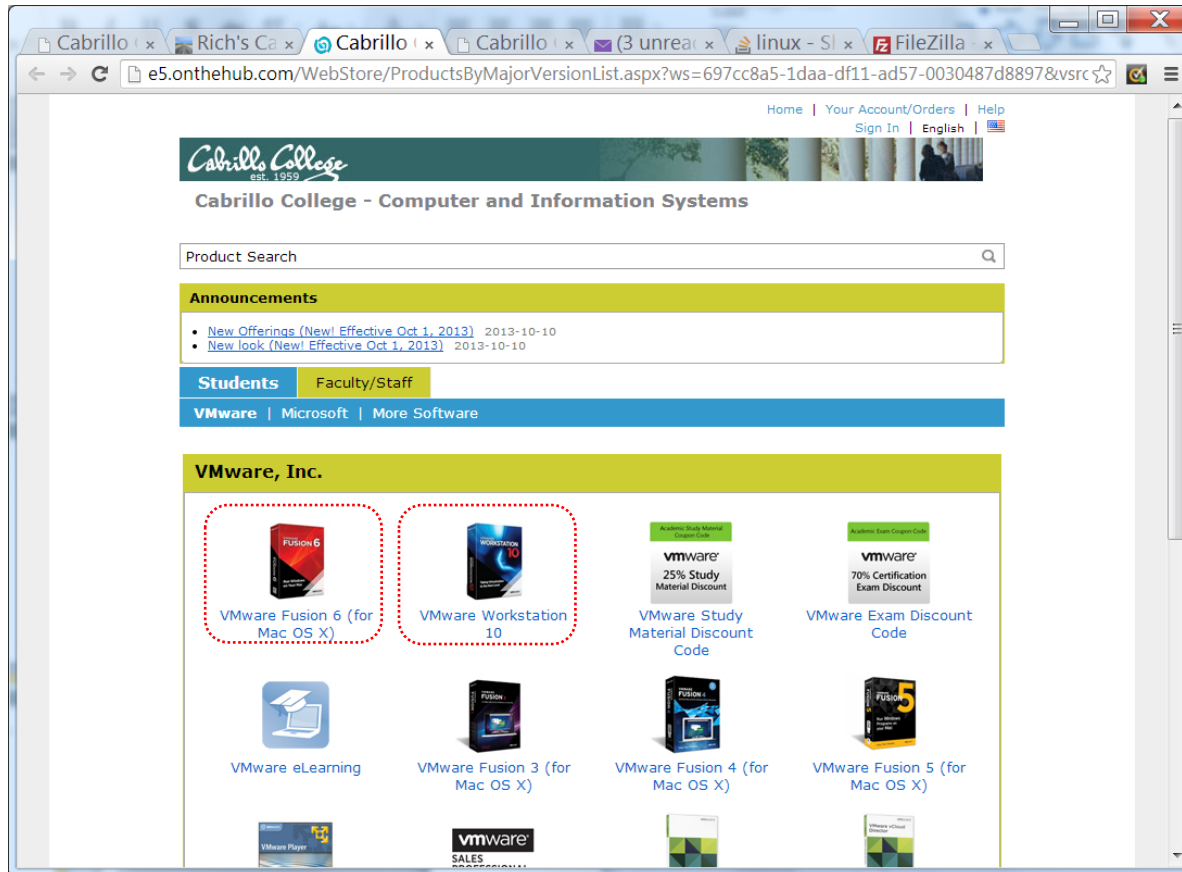
Shopping for the ingredients

VMware Workstation

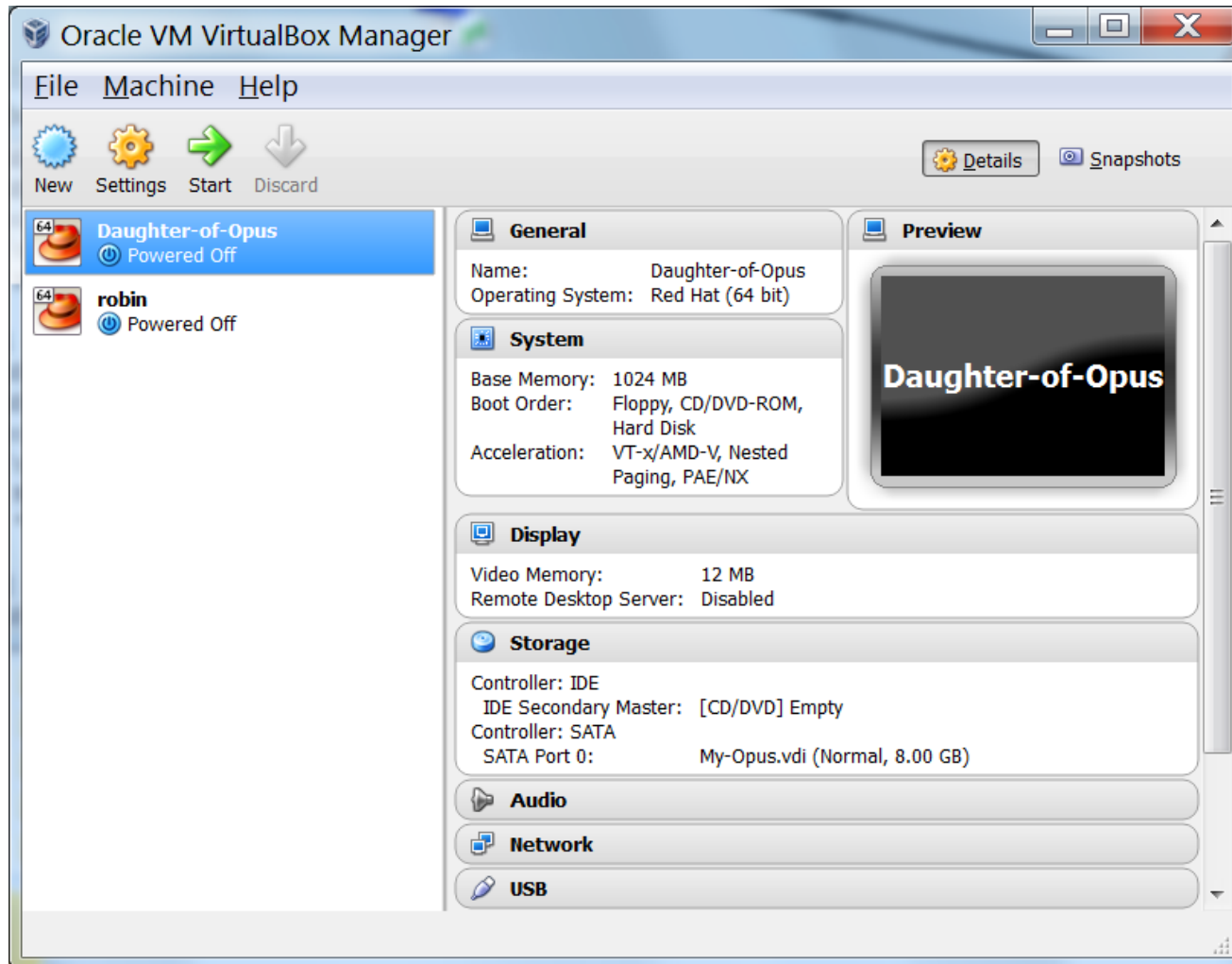


Provides you with an empty (No OS) virtual computer

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 a web browser window with the URL iso.linuxquestions.org. The page features a header with the LinuxQuestions.org logo (four penguins) and a Rackspace Managed Cloud banner. Below the header, the main content area is titled "Linux Download" and includes a "Welcome to LQ ISO" message. A sidebar on the left contains navigation links such as "LQ ISOs", "Search", "Need Help?", "Sponsored Links", "Statistics", and "LQ Job Board". The main content area lists "15 Latest Linux Distribution Releases" and "Popular Linux Distributions". A sidebar on the right contains a "Main Menu" with links to forums, tutorials, and reviews, as well as an advertisement for Google Cloud Platform.

LQ ISOs

- Search
- Alphabetical List
- Latest Releases
- Release Notification
- Suggest Additions

Search

Need Help?

- Downloading ISOs
- Burning ISOs

Sponsored Links

- Linux Os
- Ubuntu Server
- Download Linux
- Laptop Deals
- Programming
- Linux Certification
- Linux Operating System

Statistics

Distros: 465
Versions: 2760
Mirrors: 1849
Downloads: 55,668,721

LQ Job Board

Welcome to LQ ISOs

Linux Download

Answer Your Linux Questions. Expert Articles & Tips. Free Guide!

Welcome to LQ ISO

This site is designed to meet all of your Linux distribution [download](#) needs, including searching for fast [mirrors](#), receiving email updates when new versions of your favorite distributions are released and reading reviews. If you do not see the distribution [you are looking for](#) below, you can view the complete [alphabetical list](#). Please let us know if you have any suggestions.

If you find the site useful, you can help spread the word by telling 10 friends the URL (<http://www.lqiso.org/>). Thanks.

15 Latest Linux Distribution Releases	Popular Linux Distributions
1. Porteus 3.1	• Ubuntu
2. FreeNAS 9.3	• Fedora
3. SparkyLinux 3.6 "LXDE", "MATE", "Razor-qt", "Xfce"	• Linux Mint
4. MakuluLinux 7.0 "Xfce"	• openSUSE
5. antiX 14.3 "MX"	• PCLinuxOS
6. Linux Lite 2.2	• Debian
7. Manjaro Linux 0.8.11	• Mageia
8. Linux Mint 17.1	• Slackware
9. 4MLinux 10.1	• CentOS
10. DragonFly BSD 4.0.1	• Puppy
11. siduction 14.1.0	• Arch
12. NetBSD 5.2.3, 5.1.5	• MEPIS
13. Guadalinex 9	
14. Univention Corporate Server 4.0	
15. Grml 2014.11	

View by Topic: [Desktop](#), [Server](#), [Security](#), [Mobile](#), [Live](#), [Firewall](#), [Rescue](#)

Main Menu

- Linux Forums
- Android Forum
- Chrome OS Forum
- Linux HCL
- Linux Tutorials
- Linux Wiki
- Distro Reviews
- Book Reviews

Ad

Google Cloud Platform

Build apps faster on Google App Engine

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

centos.org

The image shows two browser windows. The left window displays the main CentOS website (www.centos.org). The right window displays a mirror site (mirrors.sonic.net/centos/).

CentOS Overview

CentOS is an Enterprise-class Linux Distribution derived from sources freely provided to the public by a prominent North American Enterprise Linux vendor. CentOS conforms fully with the upstream vendor's redistribution policy and aims to be 100% binary compatible. (CentOS mainly changes packages to remove upstream vendor branding and artwork.) CentOS is free.

CentOS is developed by a small but growing team of core developers. In turn the core developers are supported by an active user community including system administrators, network administrators, enterprise users, managers, core Linux contributors and Linux enthusiasts from around the world.

CentOS has numerous advantages over some of the other done projects including: an active and growing user community, quickly rebuilt, tested, and QA'ed errata packages, an extensive **mirror network**, developers who are contactable and responsive, multiple free support avenues including **IRC Chat**, **Mailing Lists**, **Forums**, a dynamic **FAQ**.

This site makes use of Javascript. If your browser doesn't work with Javascript we recommend you use **Firefox**.

CentOS 6 Releases

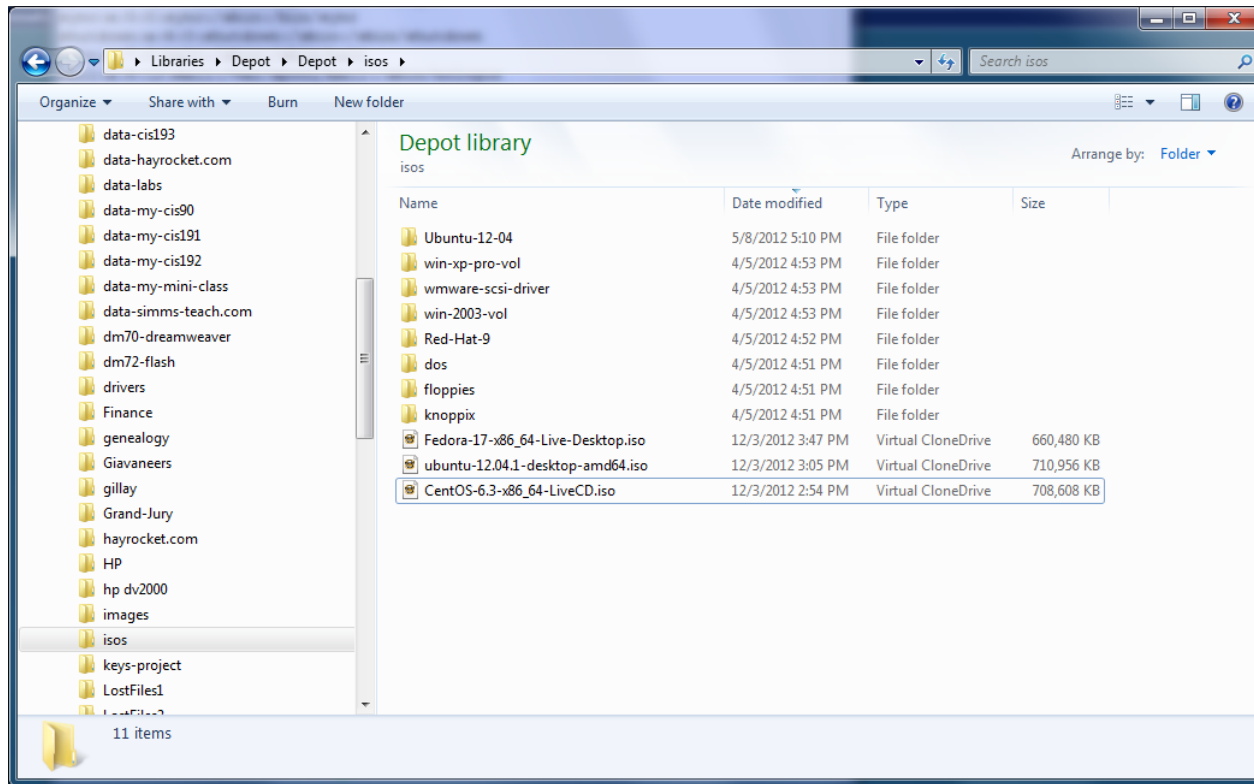
July 9th 2012

The CentOS team is pleased to **announce** the immediate availability of CentOS-6.3 for i386 and x86_64 Architectures.

CentOS 6 Releases Table

Name	Last modified	Size	Description
Parent Directory			
2.1/	08-Sep-2009 22:18	-	
2/	08-Sep-2009 22:18	-	
3.1/	02-Mar-2011 15:44	-	
3.3/	02-Mar-2011 15:44	-	
3.4/	02-Mar-2011 15:44	-	
3.5/	02-Mar-2011 15:44	-	
3.6/	02-Mar-2011 15:44	-	
3.7/	02-Mar-2011 15:44	-	
3.8/	02-Mar-2011 15:44	-	
3.9/	02-Mar-2011 15:44	-	
3/	02-Mar-2011 15:44	-	
4.0/	18-Jul-2005 14:11	-	
4.1/	21-Oct-2005 10:54	-	
4.2/	04-Nov-2006 04:43	-	
4.3/	10-Nov-2006 14:15	-	
4.4/	07-Jul-2007 11:21	-	
4.5/	10-Jan-2008 08:12	-	
4.6/	31-Mar-2009 04:55	-	
4.7/	08-Mar-2010 02:56	-	
4.8/	12-Mar-2012 17:14	-	
4.9/	12-Mar-2012 17:16	-	
4/	12-Mar-2012 17:16	-	
5.0/	10-Jan-2008 08:11	-	
5.1/	29-Jul-2008 14:01	-	
5.2/	07-Aug-2009 05:47	-	
5.3/	14-Feb-2010 04:36	-	
5.4/	11-Aug-2010 14:18	-	
5.5/	20-May-2011 02:28	-	
5.6/	19-Sep-2011 09:40	-	
5.7/	12-Mar-2012 17:20	-	
5.8/	27-Feb-2012 11:57	-	
5/	07-Mar-2012 19:47	-	
6.0/	31-Jul-2012 09:47	-	
6.1/	31-Jul-2012 09:47	-	
6.2/	31-Jul-2012 09:46	-	
6.3/	09-Jul-2012 13:10	-	
6/	09-Jul-2012 13:10	-	
RPM-GPG-KEY-CentOS-3	15-Mar-2004 15:16	1.8K	
RPM-GPG-KEY-CentOS-4	26-Feb-2005 09:51	1.8K	
RPM-GPG-KEY-CentOS-5	19-Feb-2007 09:57	1.5K	
RPM-GPG-KEY-CentOS-6	10-Jul-2011 07:28	1.7K	
RPM-GPG-KEY-CentOS-Debug-6	10-Jul-2011 07:28	1.7K	
RPM-GPG-KEY-CentOS-Security-6	10-Jul-2011 07:28	1.7K	
RPM-GPG-KEY-CentOS-Testing-6	10-Jul-2011 07:28	1.7K	
RPM-GPG-KEY-beta	19-Feb-2007 09:56	1.5K	
RPM-GPG-KEY-centos4	26-Feb-2005 09:51	1.8K	
TIME	03-Dec-2012 16:00	11	
html/	12-Jun-2004 04:56	-	

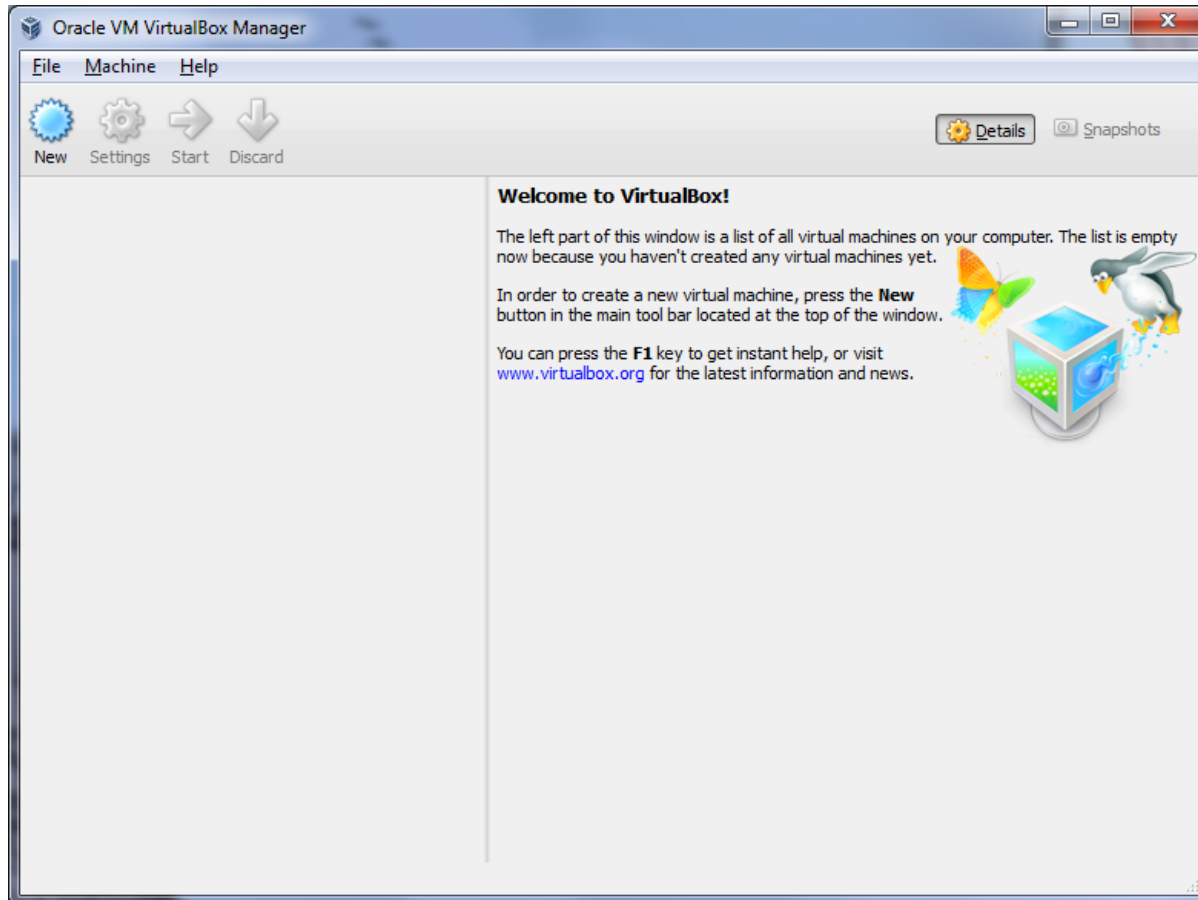
Use the CentOS Distro to make
your own Opus



Download an iso image of the Linux distribution

VirtualBox

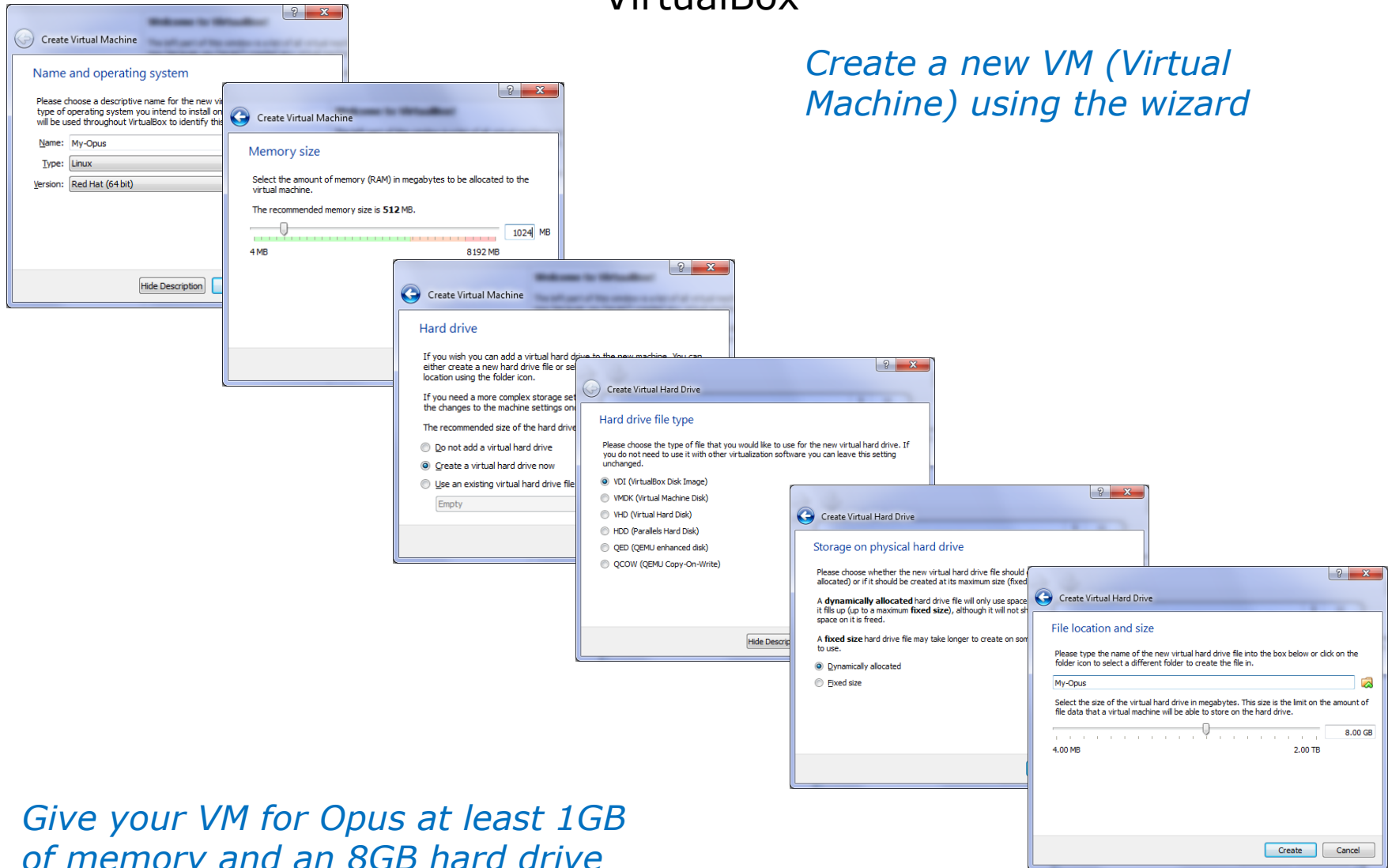
*Click the
New button
to create a
new VM.*



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

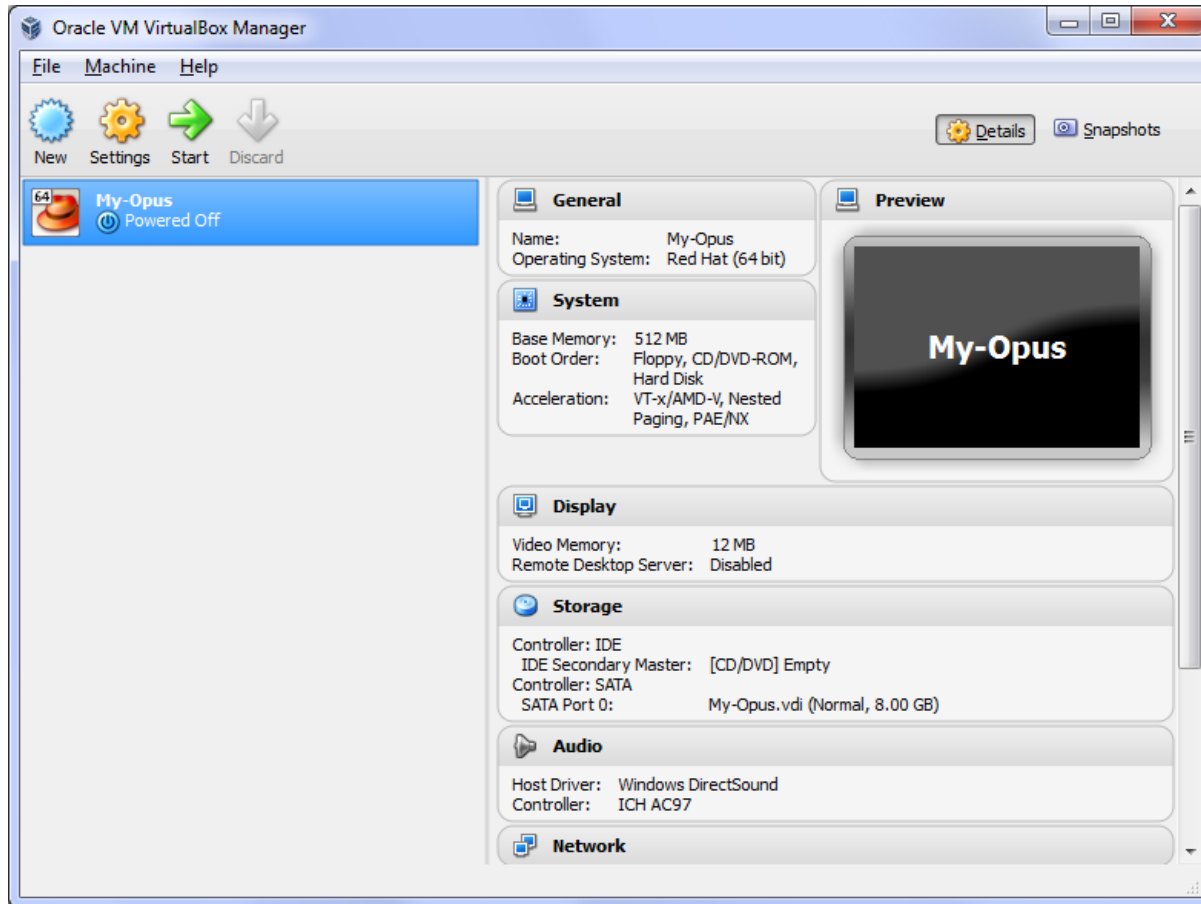
VirtualBox

Create a new VM (Virtual Machine) using the wizard



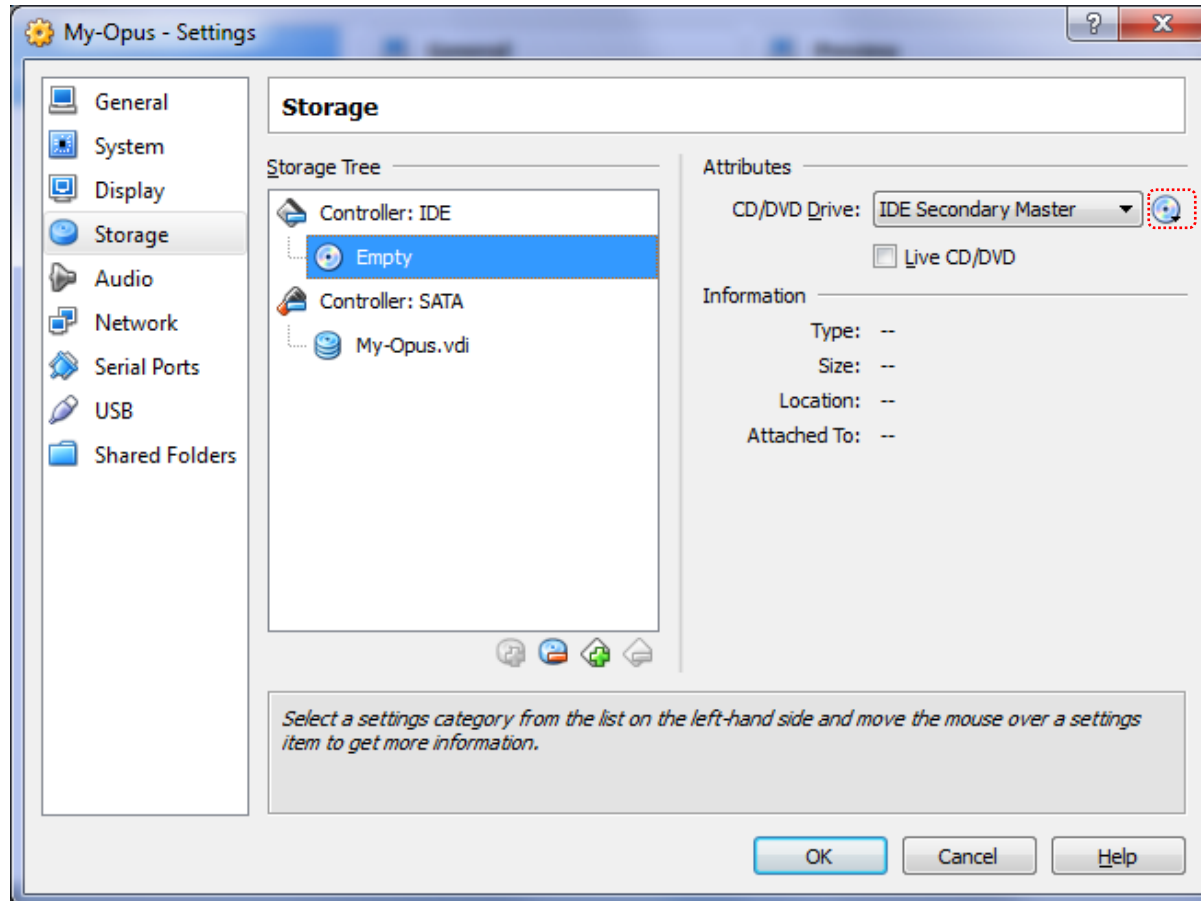
Give your VM for Opus at least 1GB of memory and an 8GB hard drive

VirtualBox



The new VM has no operating system

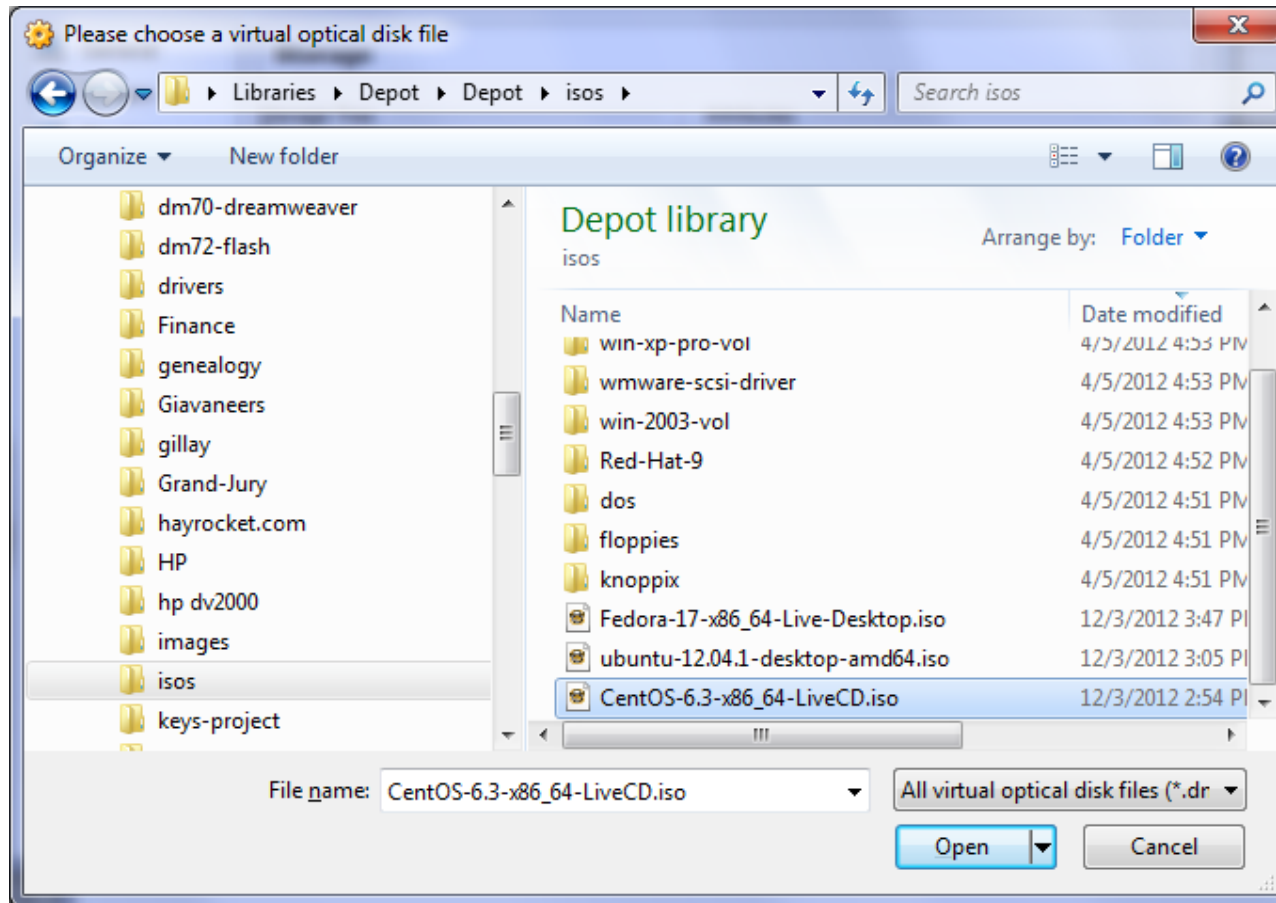
VirtualBox



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.

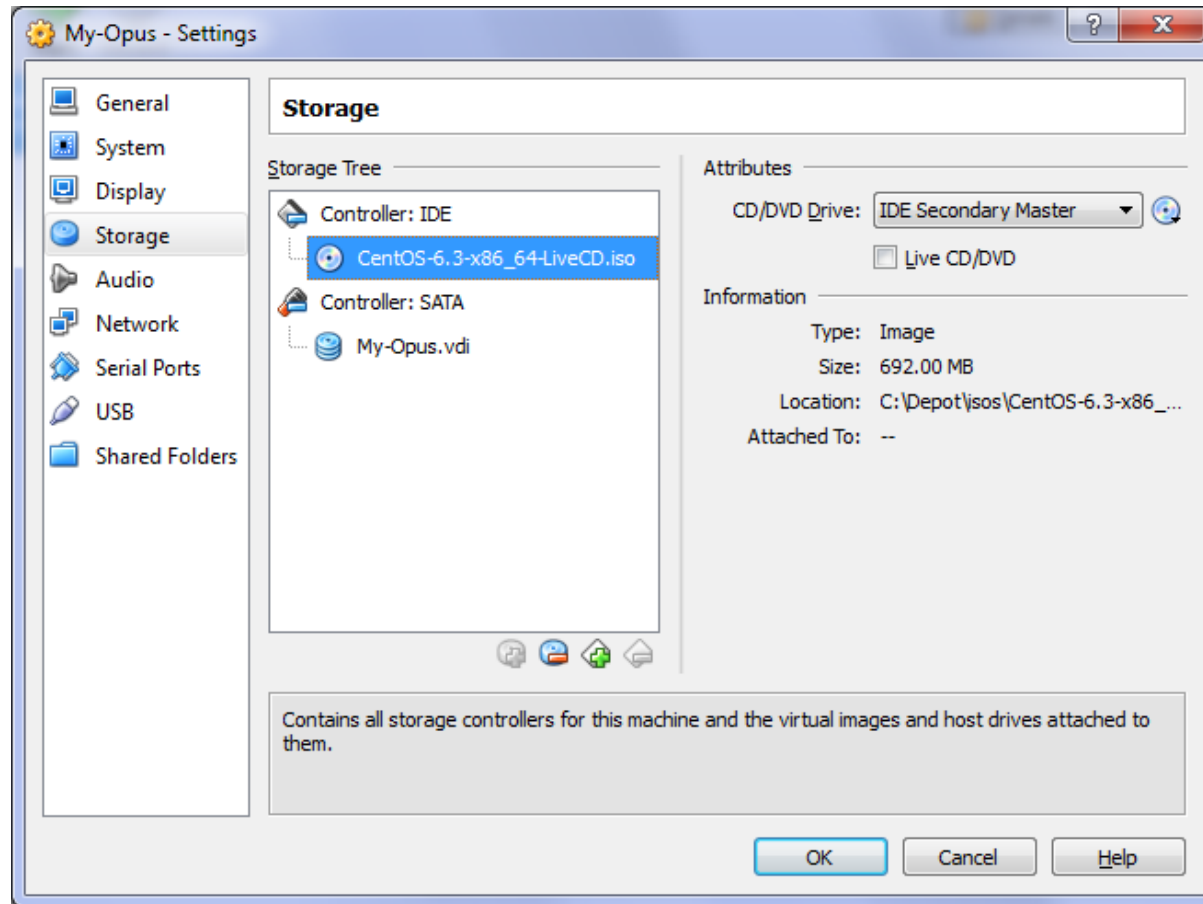
VirtualBox



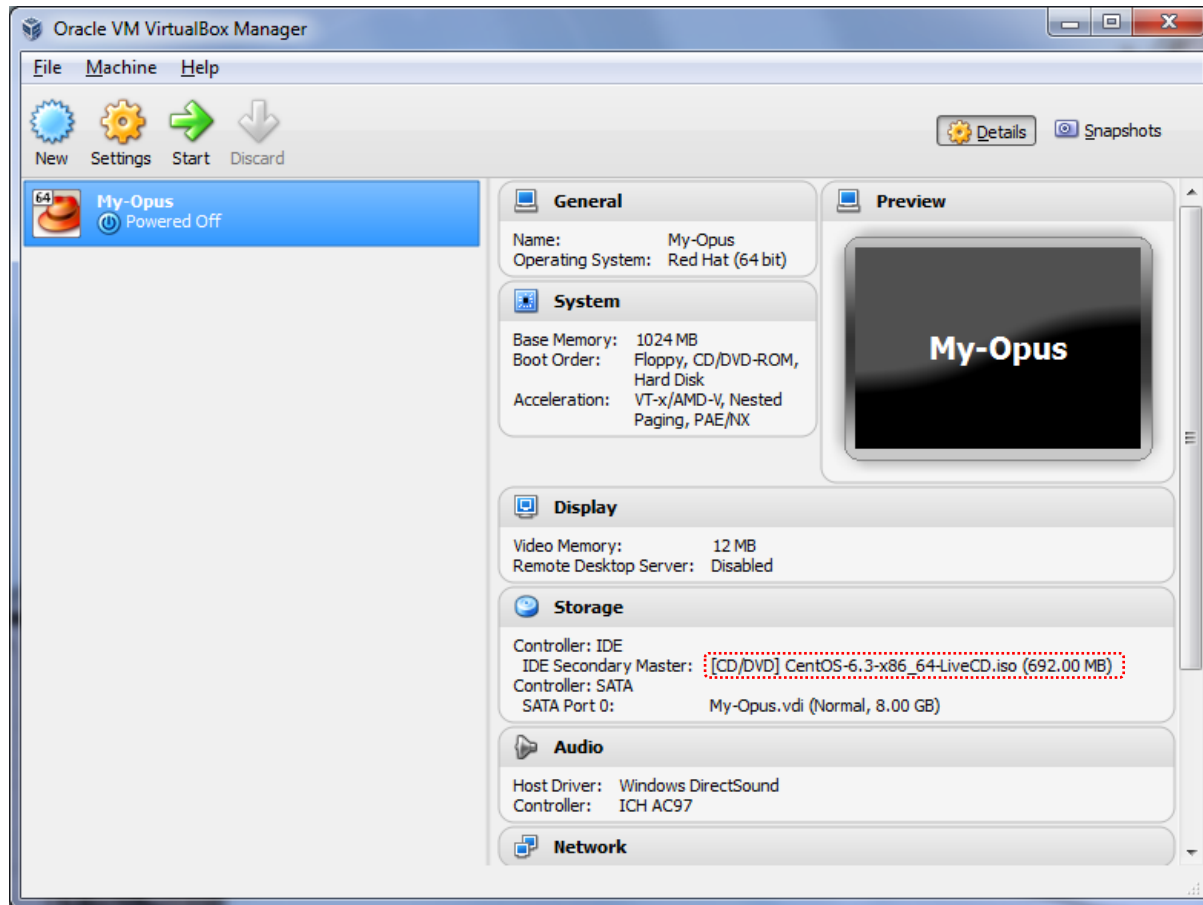
*Locate the
ISO image
to install*

CentOS-6.3-x86_64-LiveCD.iso

VirtualBox

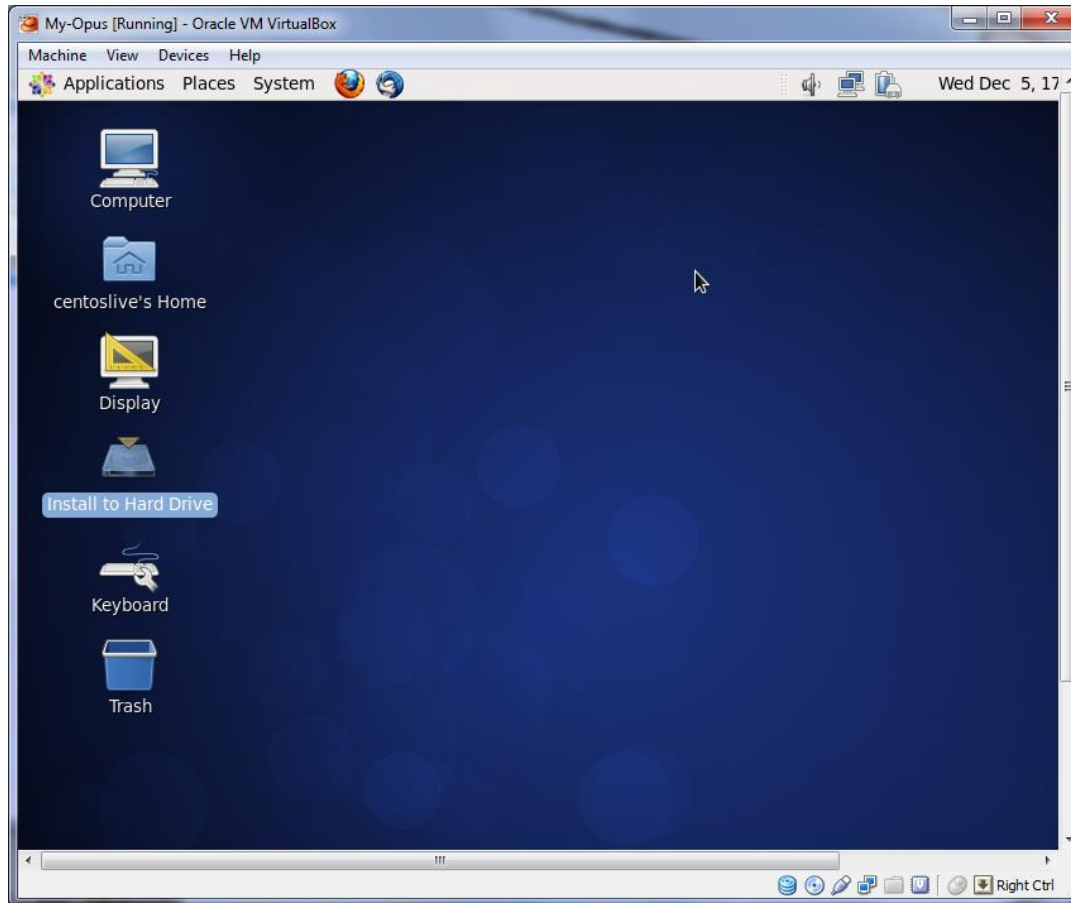


VirtualBox



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.

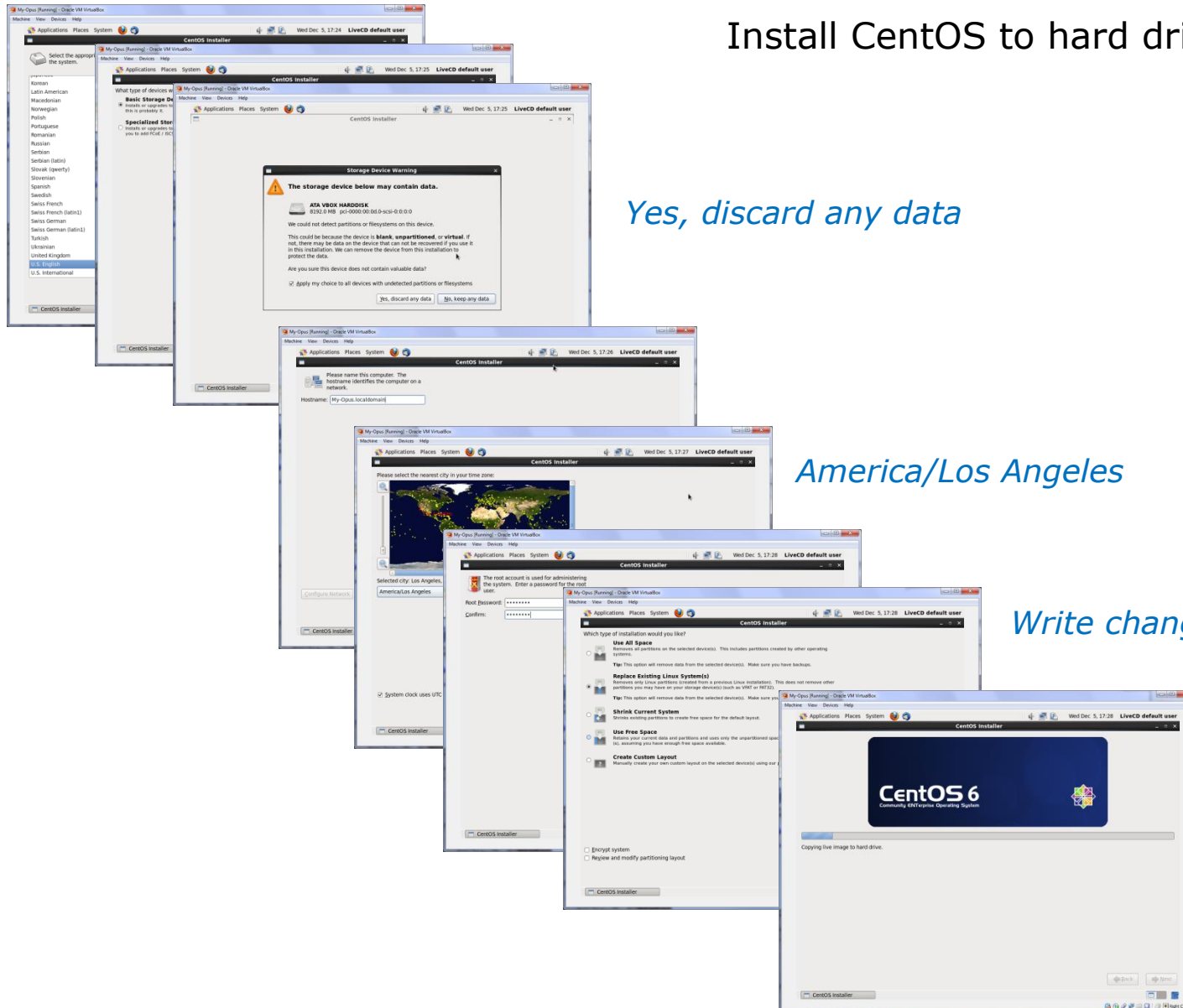
To install permanently to the VM hard drive open the "Install to Hard Drive" icon on the desktop

VirtualBox

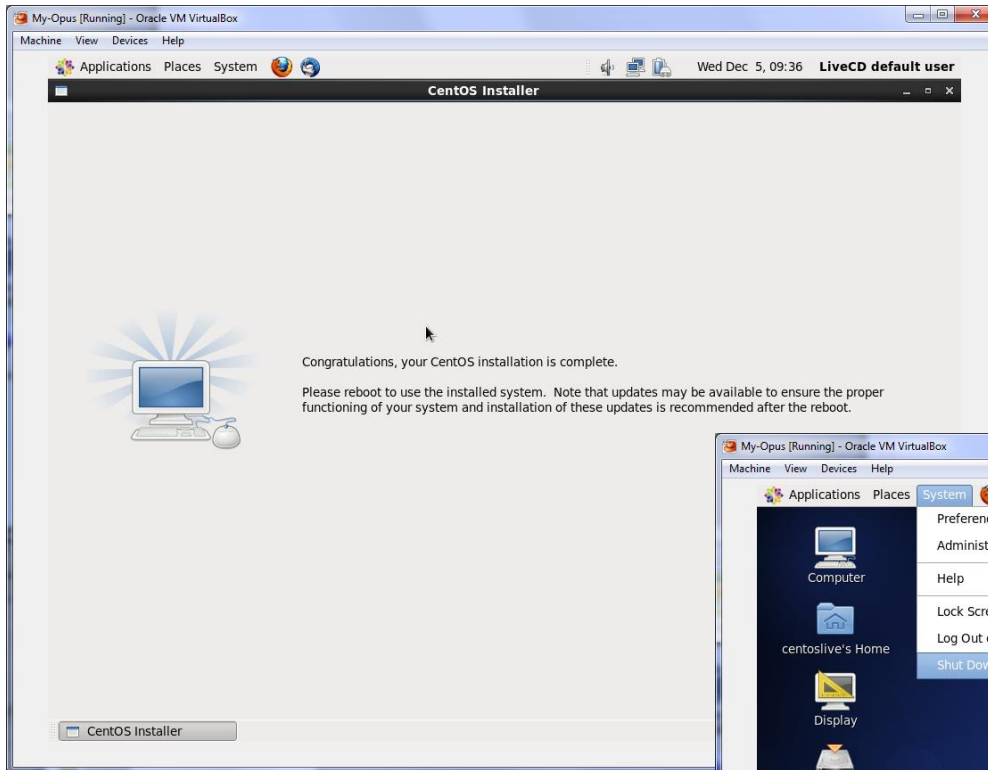


Keep hitting the Next button to let the wizard install the CentOS Linux distribution

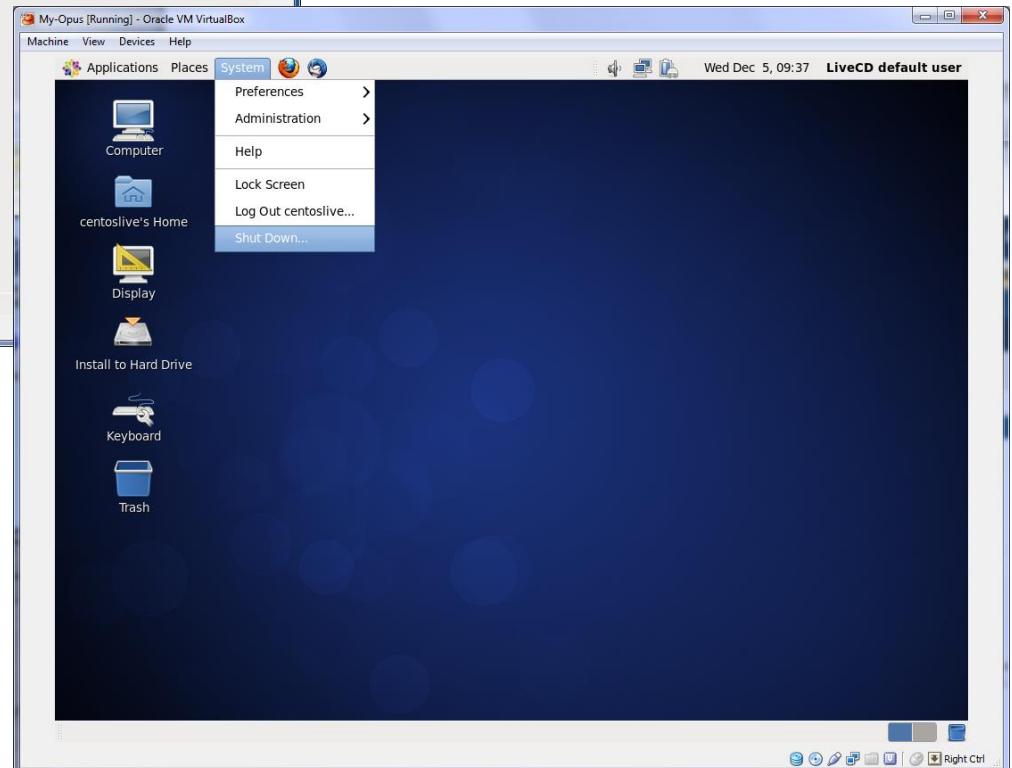
Install CentOS to hard drive



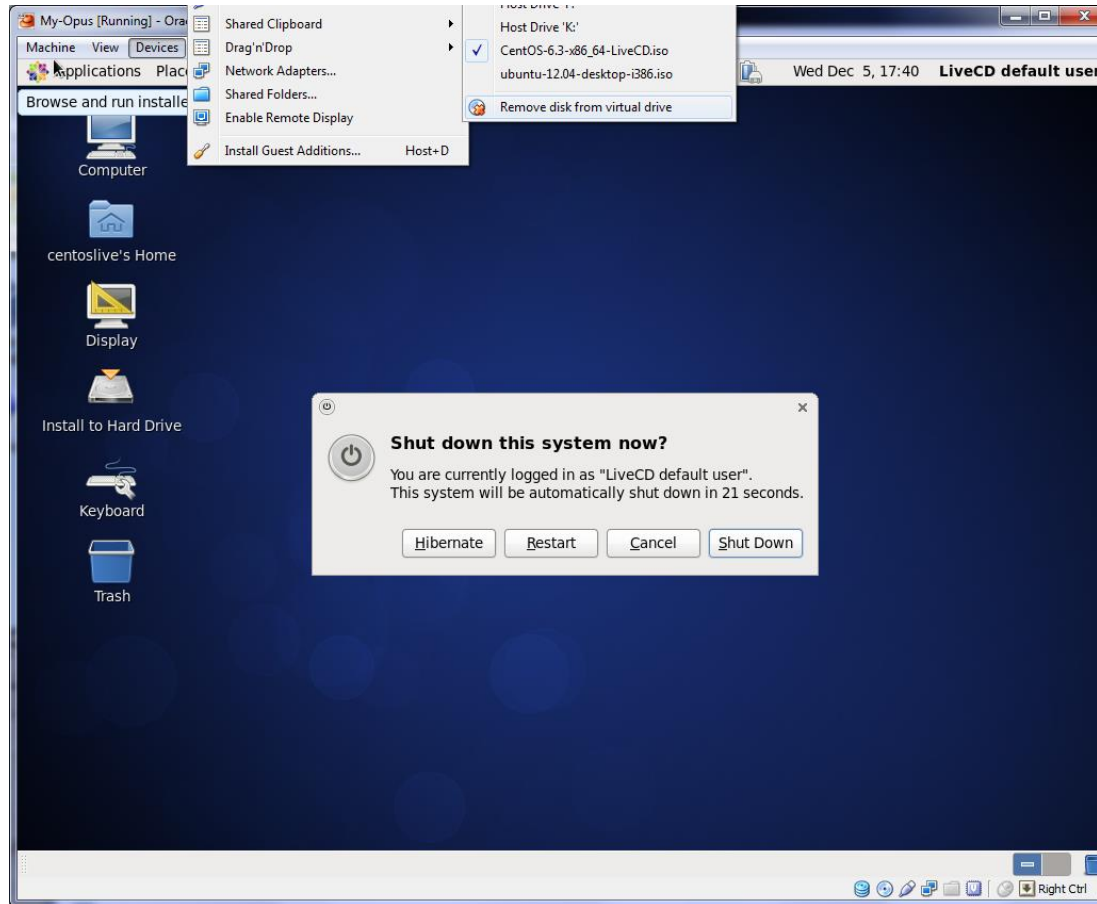
VirtualBox



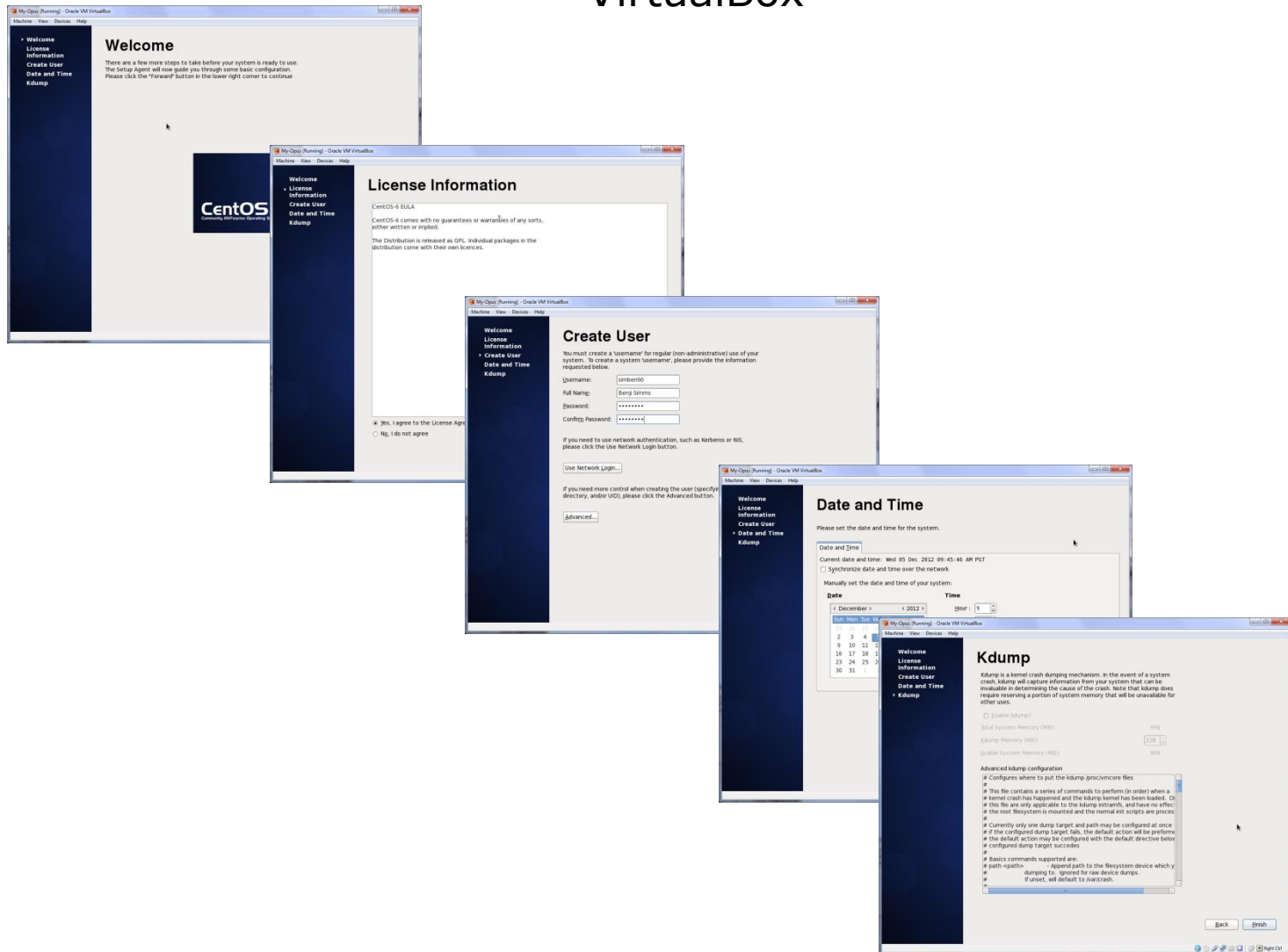
*Shutdown the system and
before starting again
remove the CD from the
drive (Settings > Storage)*



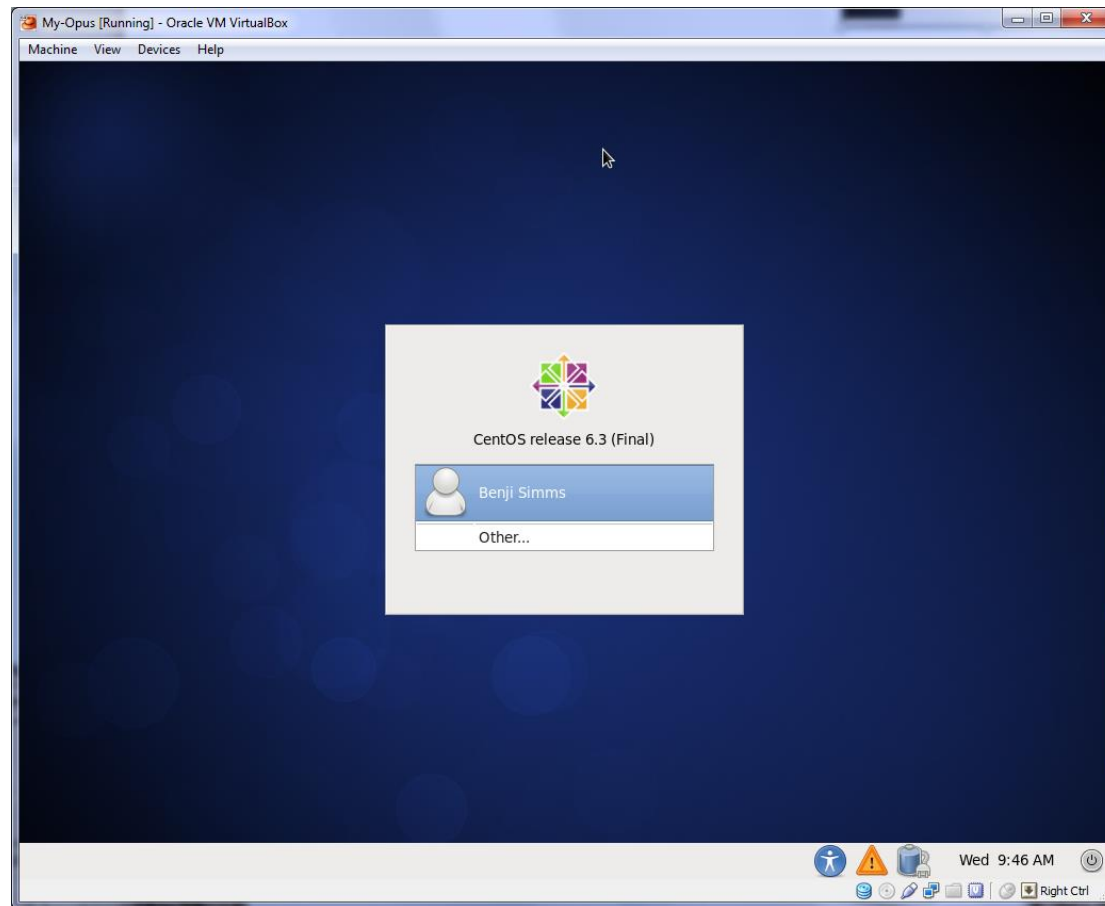
VirtualBox



VirtualBox

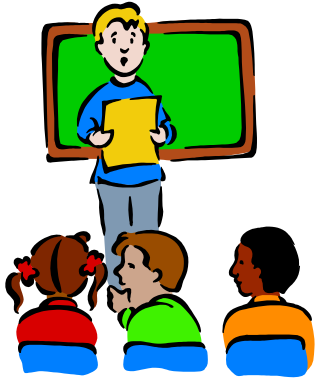


Voilà



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 888-886-3951 and use passcode: 136690
- Classroom students can use the station next to the Polycom teleconference phone.

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 display 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: "Raise your hand, make gestures, use emoticons and indicate responses using these controls" (pointing to the participant controls) and "Ask public or private questions using the chat area" (pointing to the chat window).

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) -

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

Ask public or private questions using the chat area

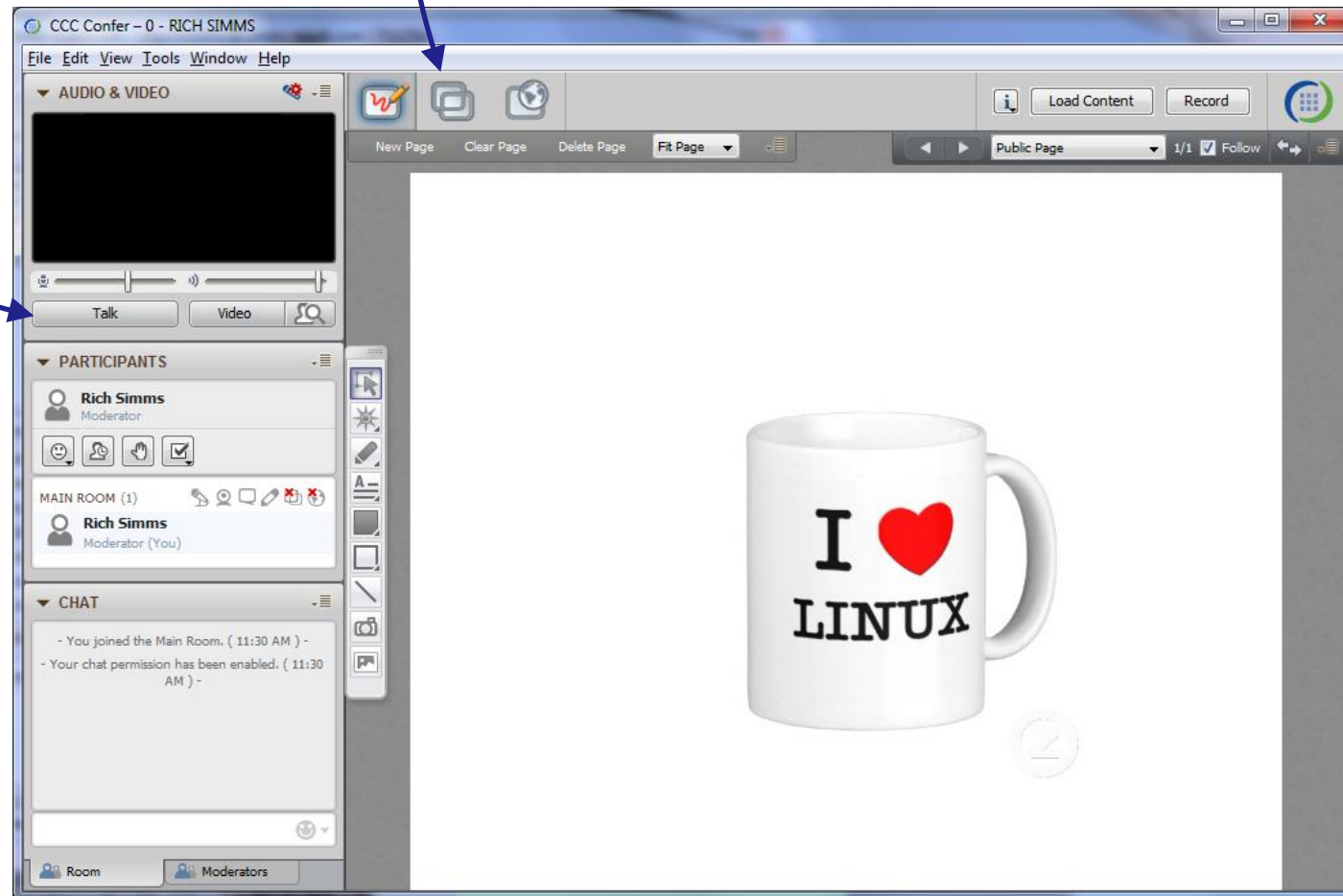
Slide1

135

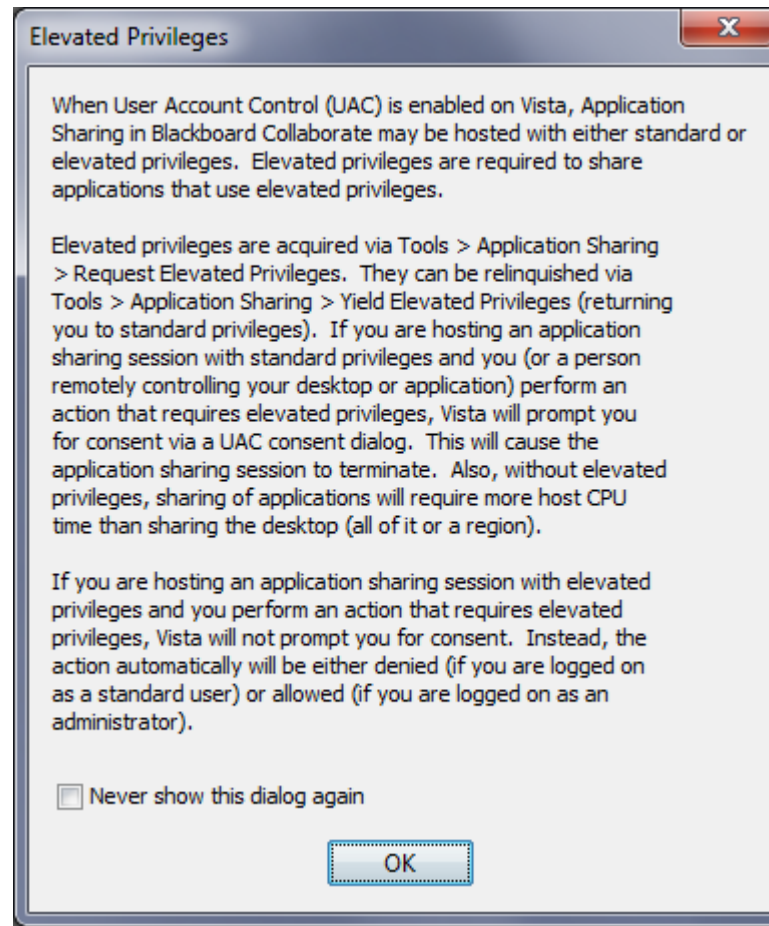
Sharing from CCC Confer

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

Click **overlapping rectangles** to share

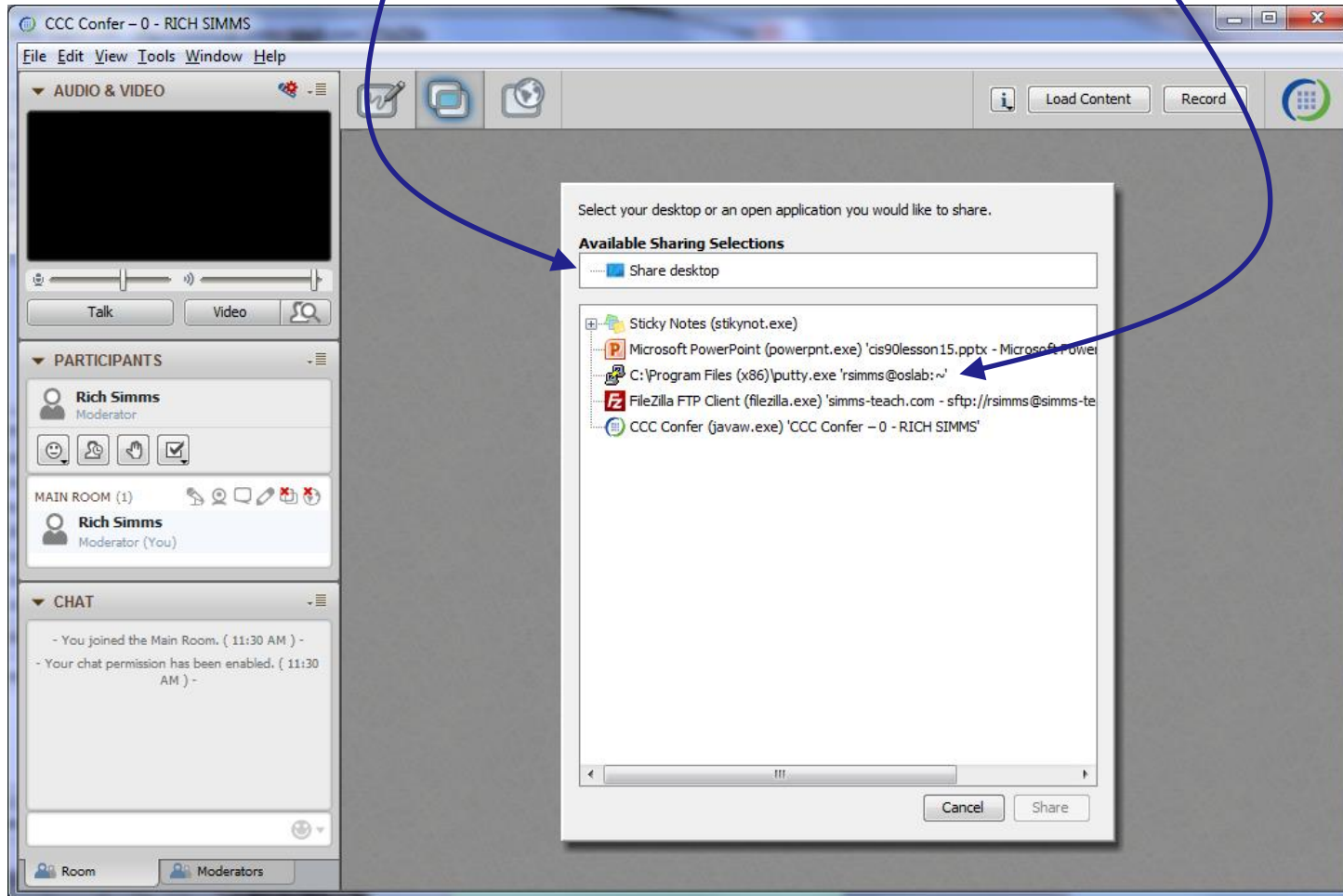


Sharing from CCC Confer



Sharing from CCC Confer

Either share putty/terminal or entire desktop



Sharing from CCC Confer

Click stop symbol to end sharing

The screenshot shows a Windows desktop environment. On the left, there is a 'CCC Confer - 0 - RIC...' window. It has a menu bar (File, Edit, View, Tools, Window, Help) and three main sections: 'AUDIO & VIDEO' with a video player and 'Talk'/'Video' buttons; 'PARTICIPANTS' showing 'Rich Simms' as the Moderator; and 'CHAT' with a message log and a text input field. In the center, a terminal window titled 'rsimms@oslab:~' is open, displaying a login sequence and a ASCII art logo for 'Opus' with the text 'Welcome to Opus Serving Cabrillo College'. The terminal prompt is '[rsimms@oslab ~]\$'. On the desktop, there are several image files (IMG_1868, IMG_1869, IMG_1866, IMG_1859) and a 'New Microsoft...' document icon. A blue arrow originates from the text 'Click stop symbol to end sharing' and points to the stop button (two vertical bars) in the CCC Confer window's audio/video section. The taskbar at the bottom shows various application icons and the system clock indicating 11:36 AM on 5/30/2013.

Wrap up

New commands:

tar

gzip

gunzip

Backup and restore files

Zip and compress files

Unzip files

New Files and Directories:

Next Class is the Final Exam

Test #3

Five Posts

Lab X1 (extra credit)

Lab X2 (extra credit)

Backup