Rich's CCC Confer checklist - setup

- ❑ Slides posted
- ❑ WB converted from PowerPoint
- ❑ Print out agenda slide and annotate page numbers

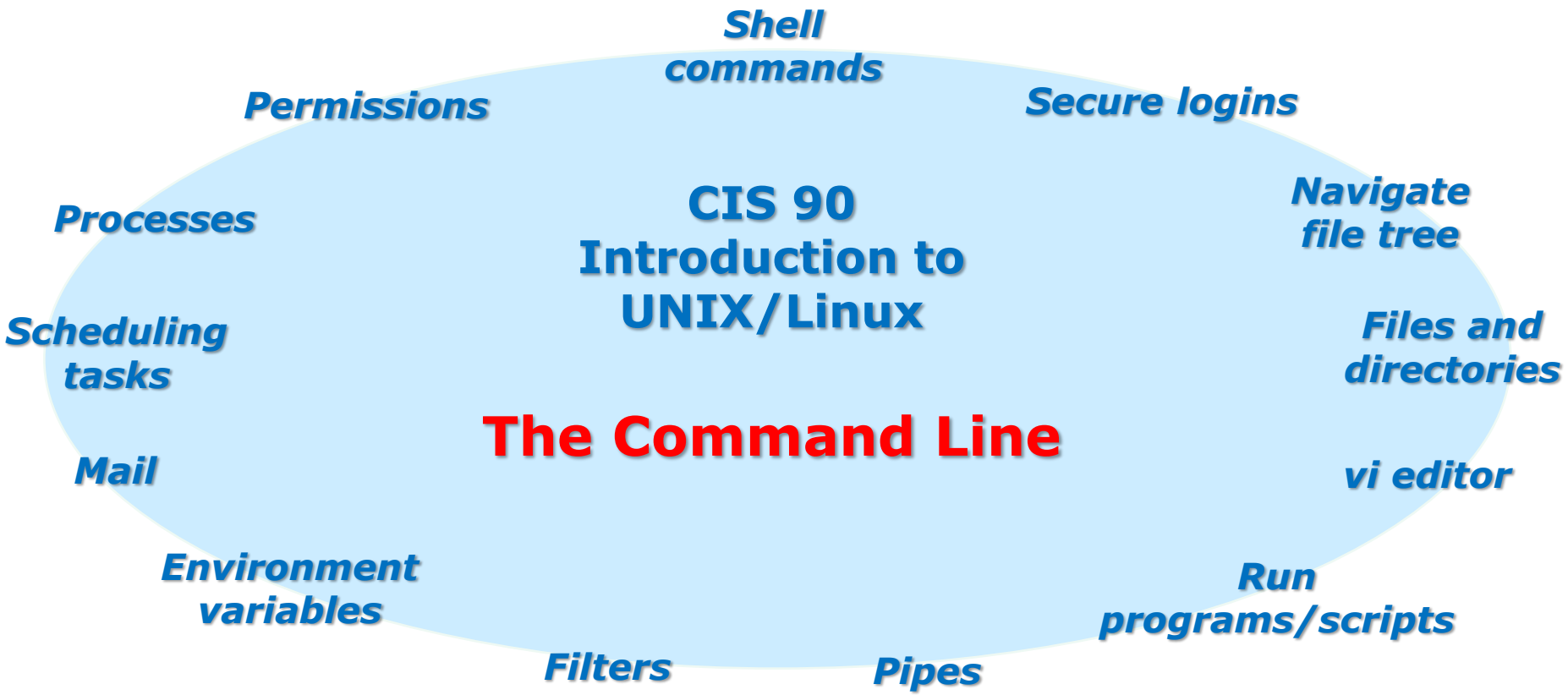
- ❑ Flash cards
- ❑ Page numbers
- ❑ 1st minute quiz
- ❑ Web Calendar summary
- ❑ Web book pages
- ❑ Commands

- ❑ Bring Linux ISOs on thumb drive
- ❑ Canvas 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
- ❑ Spare 9v battery for mic
- ❑ Key card for classroom door

- ❑ Update CCC Confer and 3C Media portals

Last updated 5/7/2017



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.

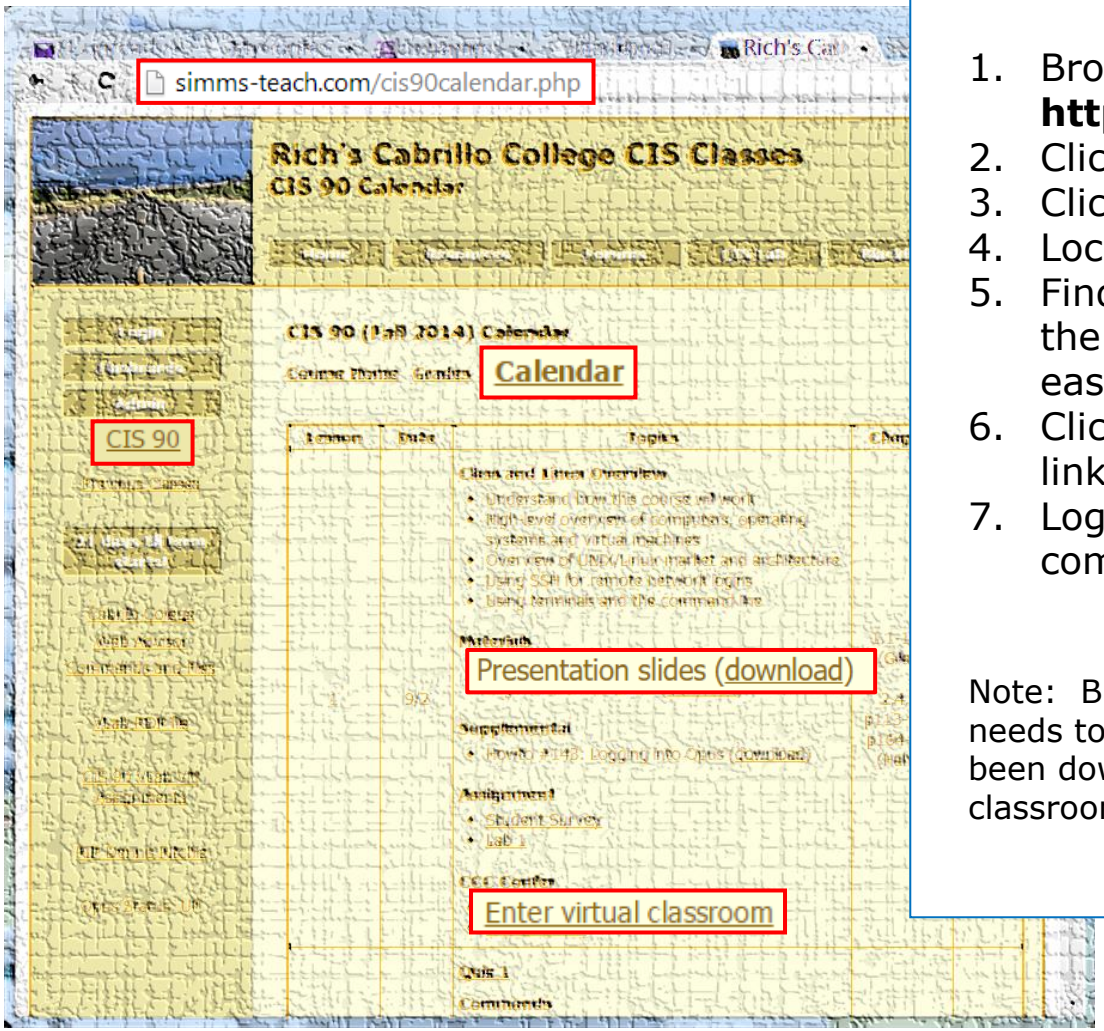
Introductions and Credits

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 for attending class

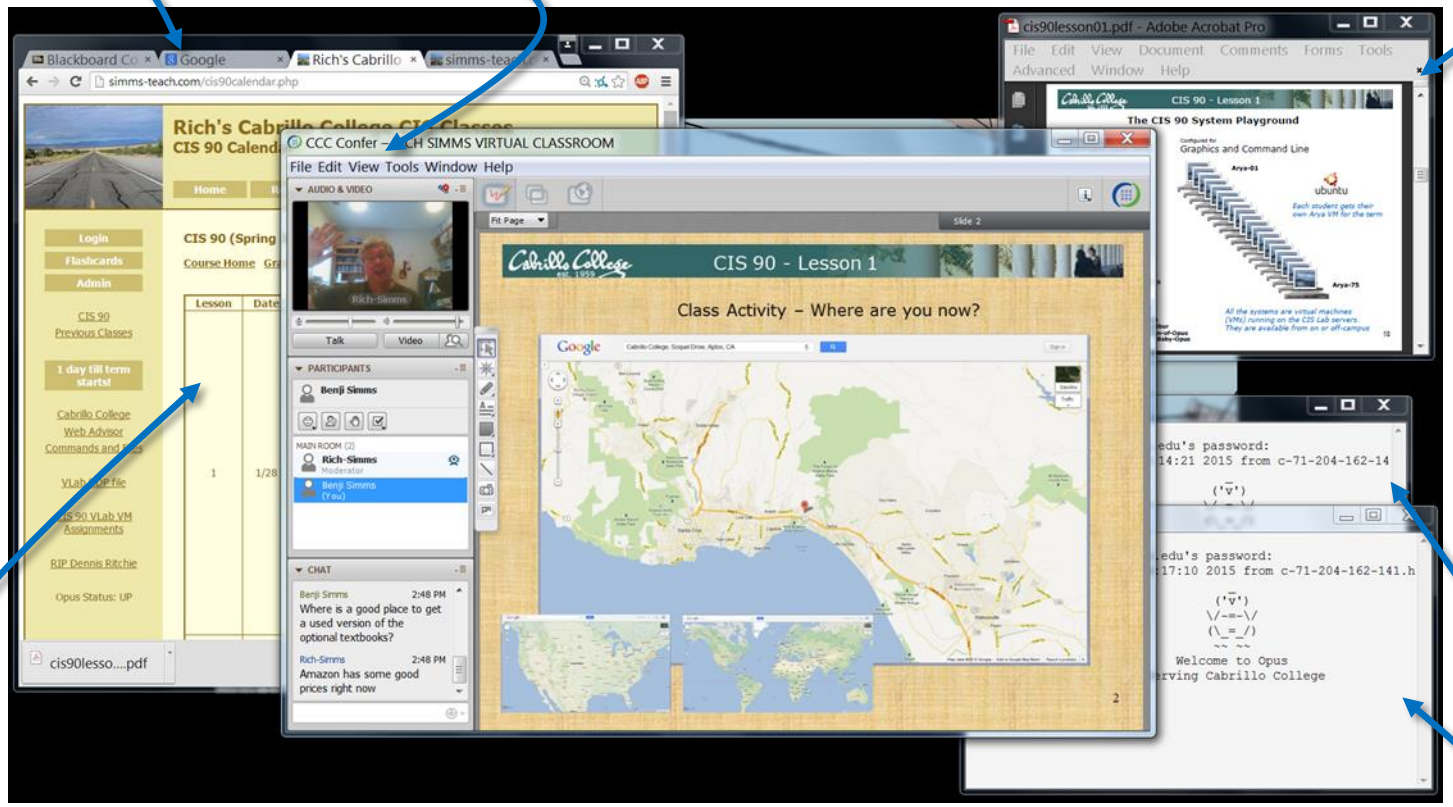


1. Browse to: **http://simms-teach.com**
2. Click the **CIS 90** link.
3. Click the **Calendar** link.
4. Locate today's lesson.
5. Find the **Presentation slides** for the lesson and **download** for easier viewing.
6. Click the **Enter virtual classroom** link to join CCC Confer.
7. Log into Opus with Putty or ssh command.

Note: Blackboard Collaborate Launcher only needs to be installed once. It has already been downloaded and installed on the classroom PC's.

Student checklist for suggested screen layout

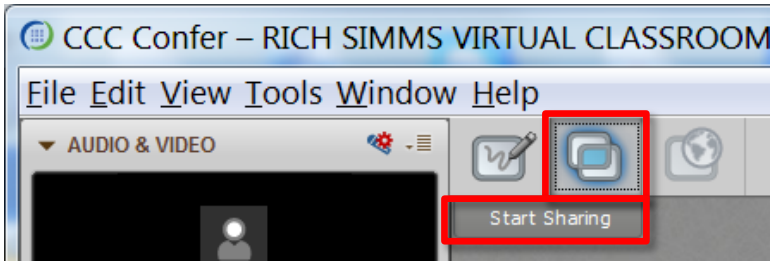
- ❑ *Google*
- ❑ *CCC Confer*
- ❑ *Downloaded PDF of Lesson Slides*



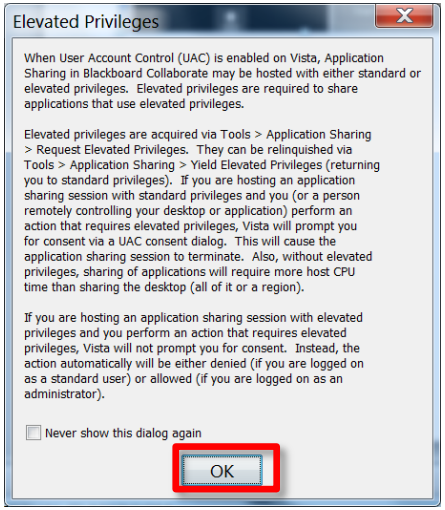
- ❑ *CIS 90 website Calendar page*
- ❑ *One or more login sessions to Opus*

Student checklist for sharing desktop with classmates

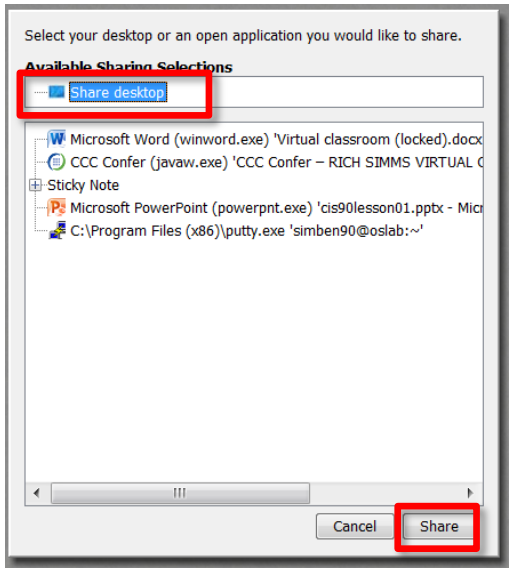
1) Instructor gives you sharing privileges



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



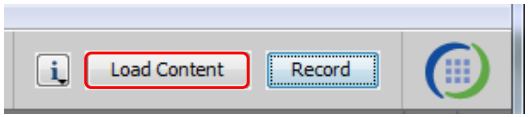
3) Click OK button.



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

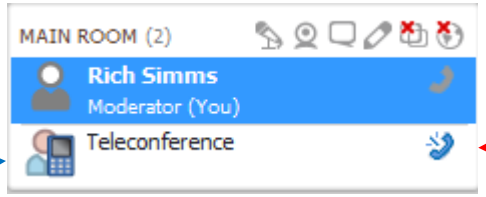
Rich's CCC Confer checklist - setup

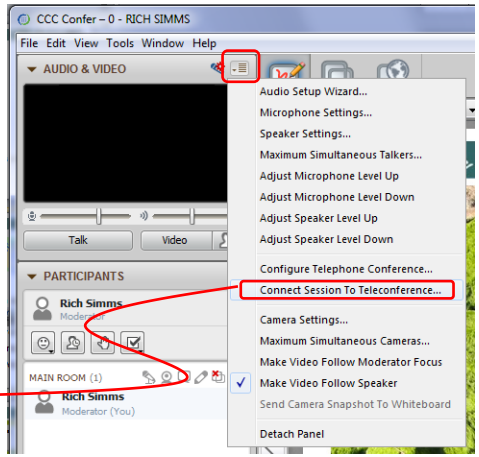
[ ] Preload White Board



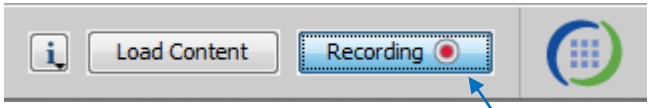
[ ] Connect session to Teleconference

Session now connected to teleconference





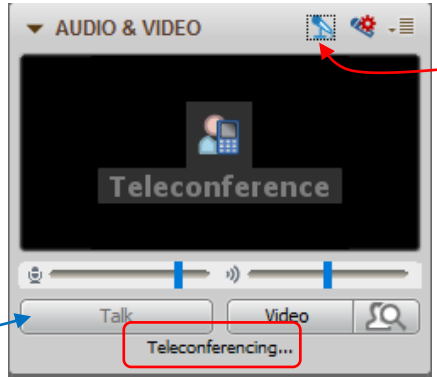
[ ] Is recording on?



Red dot means recording

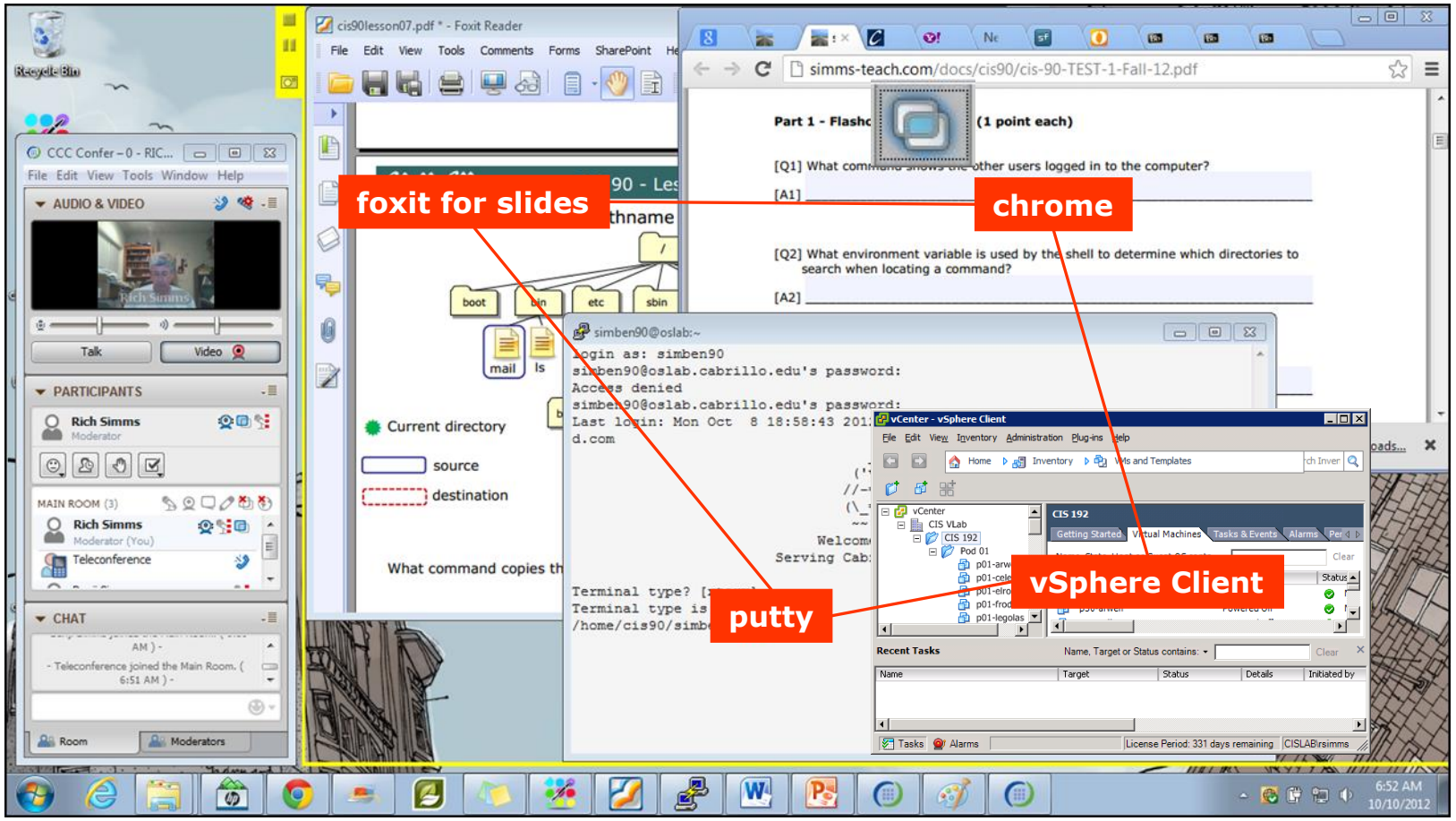
[ ] Use teleconferencing, not mic

Should be grayed out



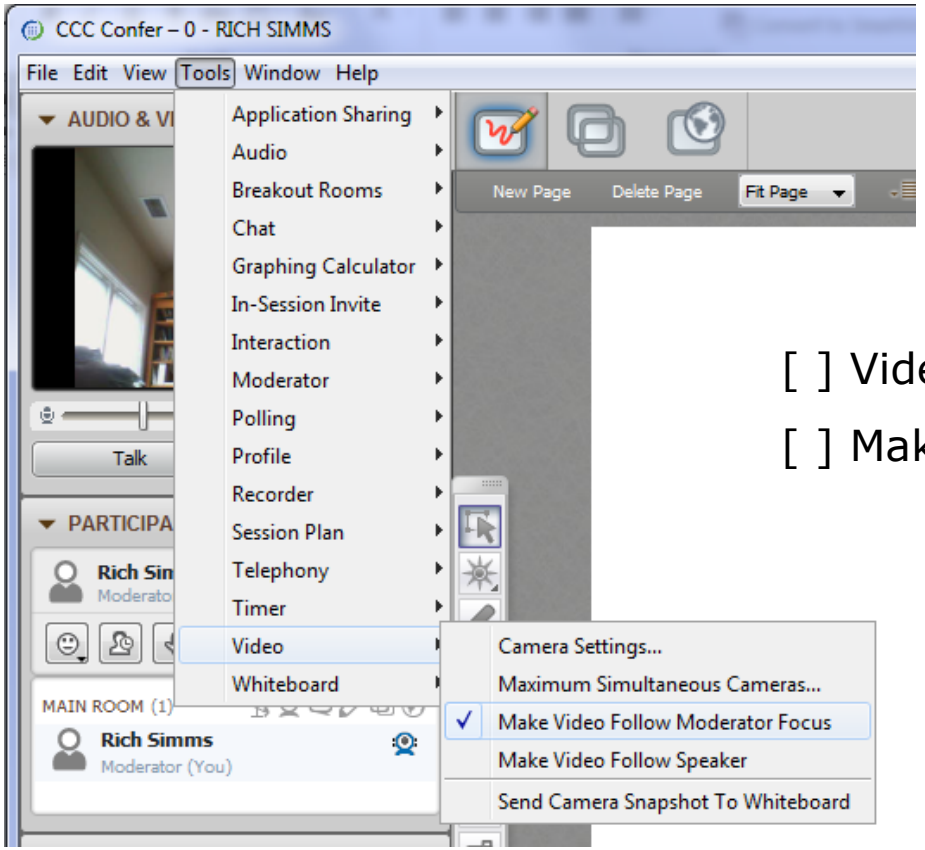
Should change from phone handset icon to little Microphone icon and the Teleconferencing … message displayed

Rich's CCC Confer checklist - screen layout



[ ] layout and share apps

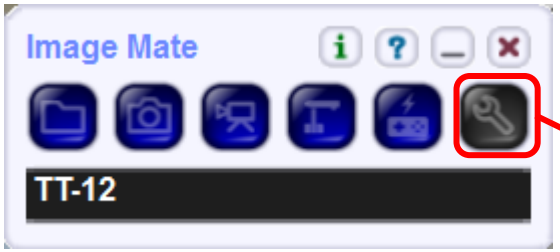
Rich's CCC Confer checklist - webcam setup

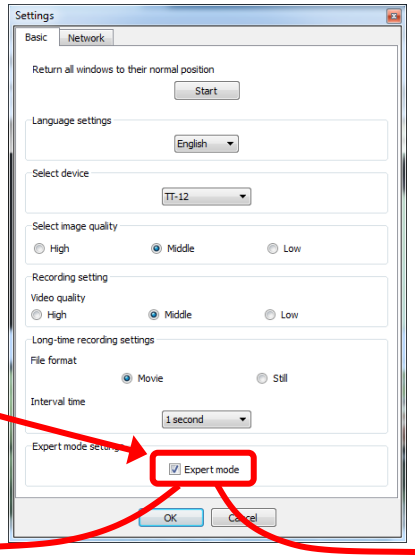


[ ] Video (webcam)

[ ] Make Video Follow Moderator Focus

Rich's CCC Confer checklist - Elmo



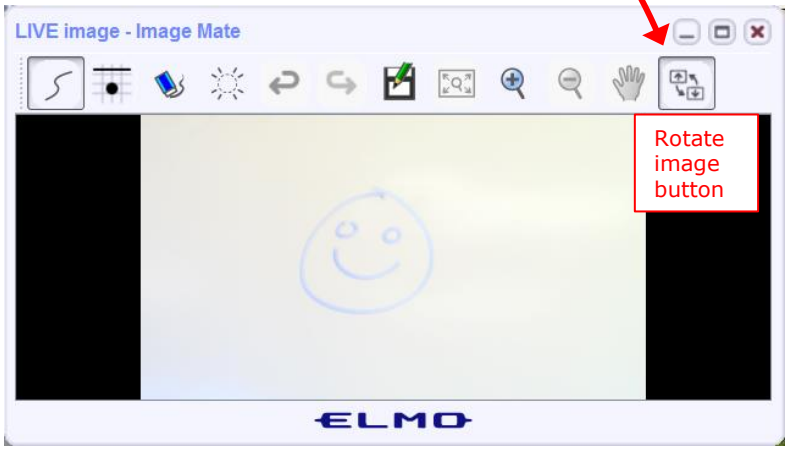


The "rotate image" button is necessary if you use both the side table and the white board.

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

Elmo rotated down to view side table

Elmo rotated up to view white board



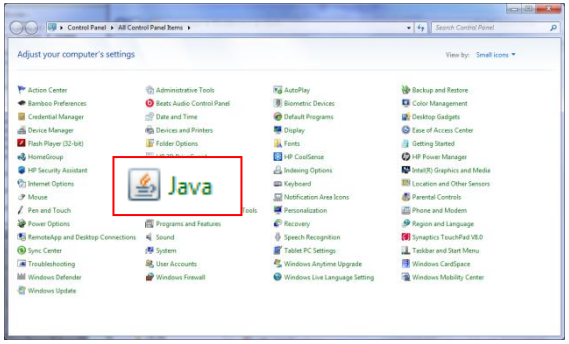
Run and share the Image Mate program just as you would any other app with CCC Confer

Rich's CCC Confer checklist - universal fixes

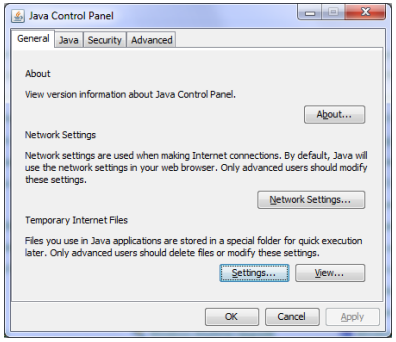
Universal Fix for CCC Confer:

1) Shrink (500 MB) and delete Java cache
2) Uninstall and reinstall latest Java runtime
3) http://www.cccconfer.org/support/technicalSupport.aspx

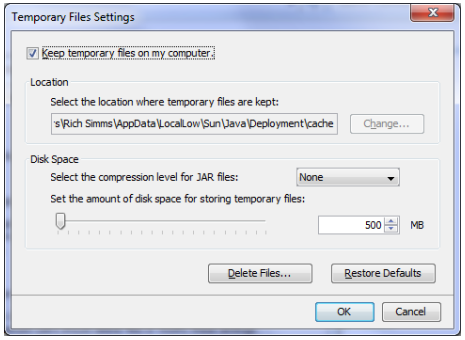
Control Panel (small icons)



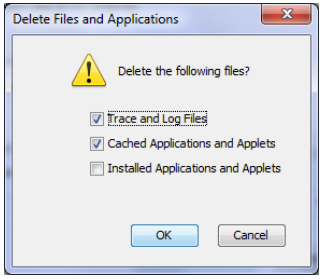
General Tab > Settings…



500MB cache size

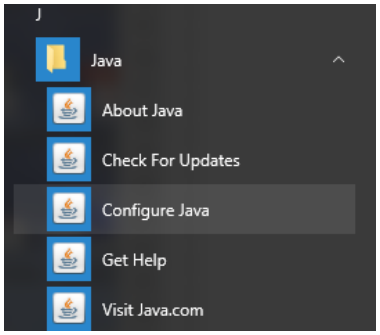


Delete these

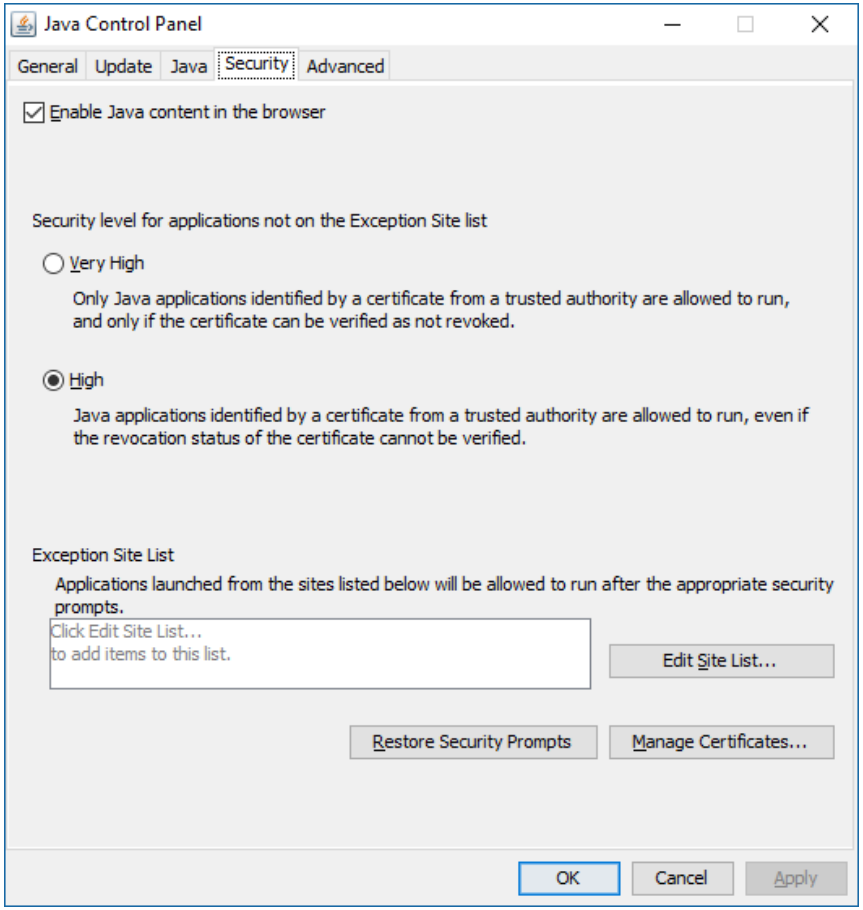


Google Java download

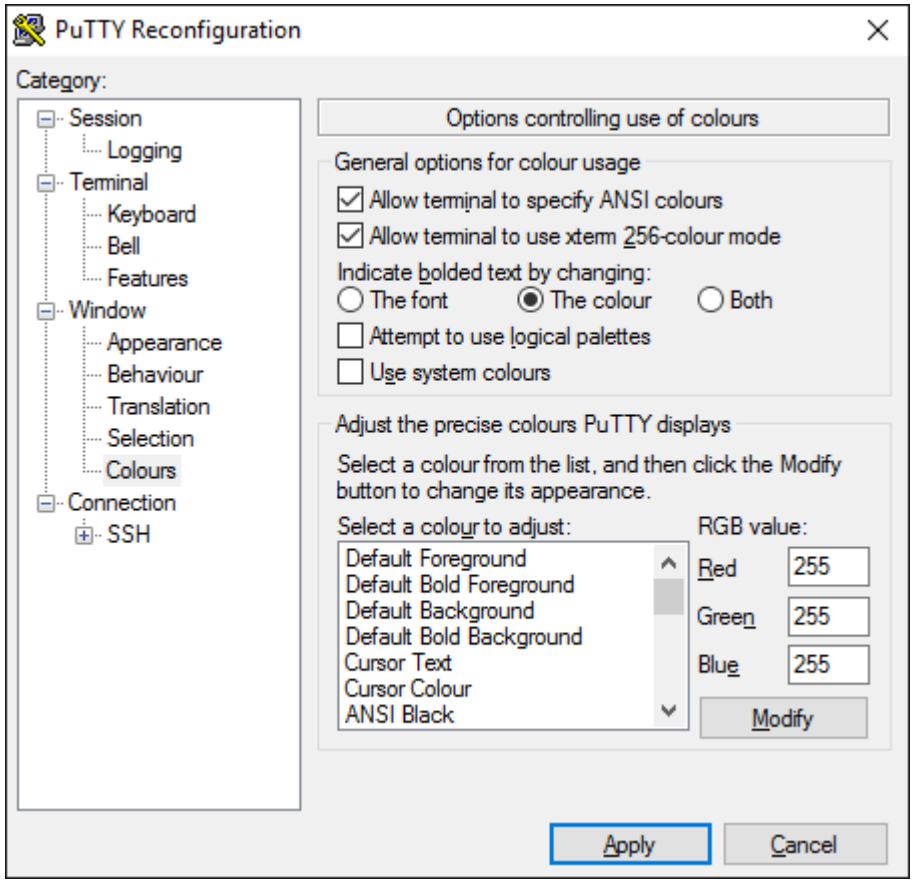
Rich's CCC Confer checklist - digital certificate work around



1. Open the Java Control Panel
2. Select the **Security** tab
3. Select **Edit Site List...**
4. Select **Add**
5. Click into the white box next to the red exclamation mark and type **https://na-downloads.elluminate.com**
6. Press OK
7. Press **Continue** on the pop-up message
8. Press OK
9. Access your session or recording once more



Rich's CCC Confer checklist - Putty Colors



http://looselytyped.blogspot.com/2013/02/zenburn-pleasant-color-scheme-for-putty.html

Putty Colors

Default Foreground 255 255 255
Default Bold Foreground 255 255 255
Default Background 51 51 51
Default Bold Background 255 2 85
Cursor Text 0 0 0
Cursor Color 0 255 0
ANSI Black 77 77 77
ANSI Black Bold 85 85 85
ANSI Red 187 0 0
ANSI Red Bold 255 85 85
ANSI Green 152 251 152
ANSI Green Bold 85 255 85
ANSI Yellow 240 230 140
ANSI Yellow Bold 255 255 85
ANSI Blue 205 133 63
ANSI Blue Bold 135 206 235
ANSI Magenta 255 222 173
ANSI Magenta Bold 255 85 255
ANSI Cyan 255 160 160
ANSI Cyan Bold 255 215 0
ANSI White 245 222 179
ANSI White Bold 255 255 255

Start

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.*

Volume
**4 - increase conference volume.*
**7 - decrease conference volume.*
**5 - increase your voice volume.*
**8 - decrease your voice volume.*

Instructor: **Rich Simms**
Dial-in: **888-886-3951**
Passcode: **136690**

Melissa

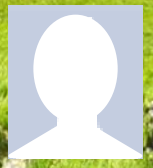
Tess

Philip

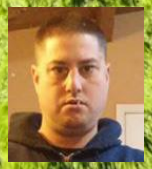
Daniel

Ian J.

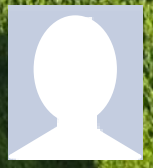
Harold


Steven P.

Jasen


Sam

Ryan


Roberto

Hans

Cristian

Nicholas

Nigel

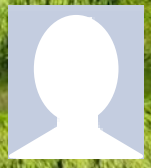
Luis

Stephen L.

Alison

Gracie

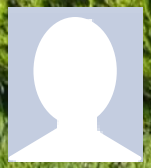
Cameron


Julian

Ken

Ian C.

Samantha


Justin

Email me (risimms@cabrillo.edu) a relatively current photo of your face for 3 points extra credit

Quiz

No Quiz Today !

File Transfer and Review

Objectives	Agenda
• Transfer project files to Windows and Linux systems • Prepare for final exam	• No Quiz • Questions • Housekeeping • Final Exam (Test 3) • Test 3 Tips • File transfer continued • Compressed archives • Make your own Opus • Project Presentations • Wrap up

Questions

Questions?

Lesson material?

Labs? Tests?

How this course works?

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

Who questions much, shall learn much, and retain much.
- Francis Bacon

If you don't ask, you don't get.
- Mahatma Gandhi

Chinese Proverb	他問一個問題，五分鐘是個傻子，他不問一個問題仍然是一個傻瓜永遠。 *He who asks a question is a fool for five minutes; he who does not ask a question remains a fool forever.*

Housekeeping

Project is due tonight!

Don't forget to submit your project!

- 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 15th.
- Extra credit labs and forum posts due 11:59 PM day of the final exam.
- Practice test for final exam is available now.
- Practice test server will shutdown 30 minutes before the final exam.

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

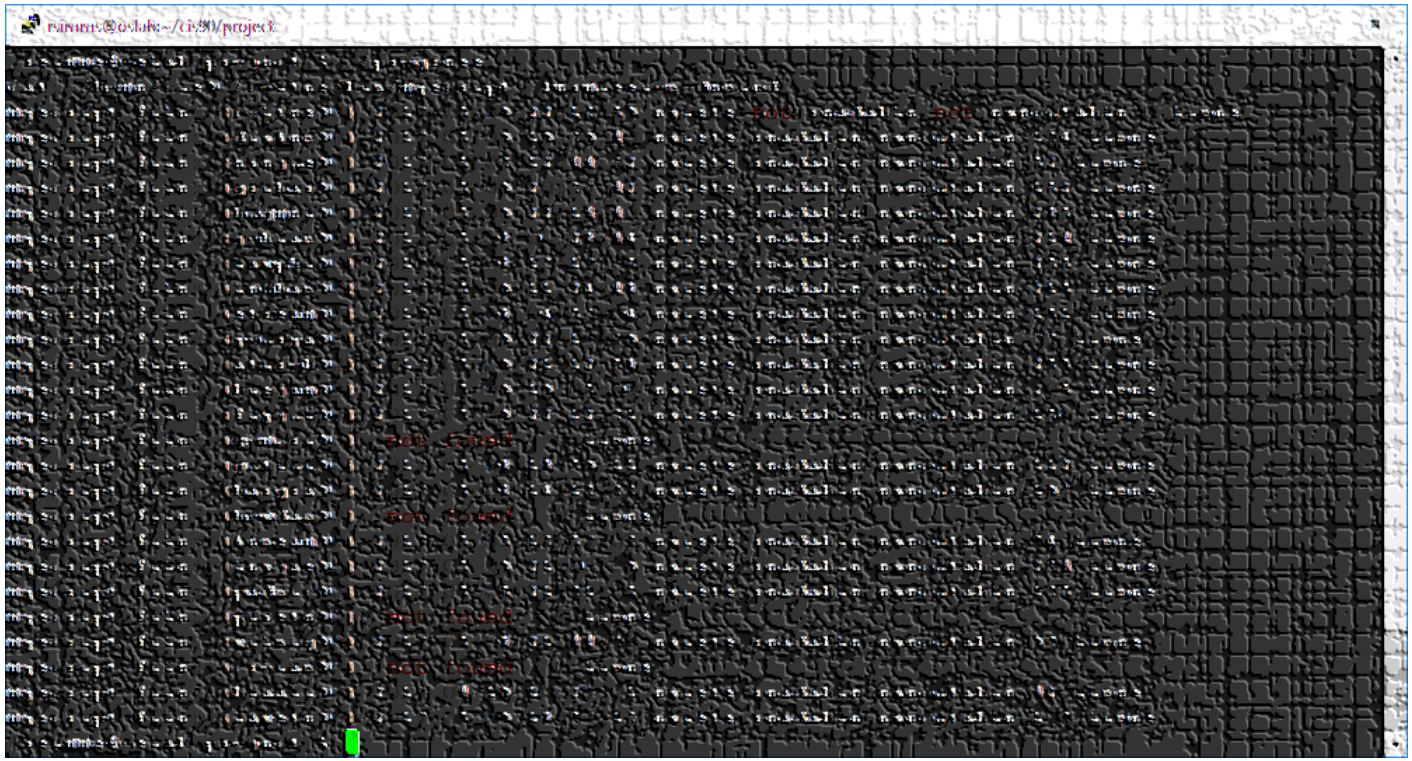
Make sure you have at least five of these implemented

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

Plagiarizing another author's code is a NO-NO! All points lost!

Scripts that result in unauthorized hacking" is a NO-NO! All points lost!

Final project status



To get started see Lesson 13 "Final Project Getting Started" module

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

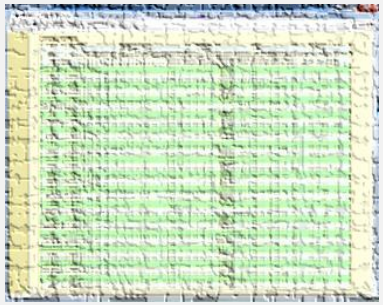
```
/home/cis90/simben/bin $ cp myscript myscript.v3
```

Where to find your grades

Send me your survey to get your LOR code name.

The CIS 90 website Grades page

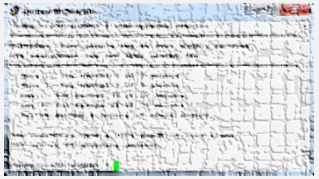
http://simms-teach.com/cis90grades.php



Or check on Opus

checkgrades *codename*

(where codename is your LOR codename)



Written by Jesse Warren 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

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**

Final Exam (Test 3)

Heads up on Final Exam

Test #3 (final exam) is MONDAY May 15th 7-9:50AM

Mon	5/15	**Test #3 (the final exam)** **Time** • MONDAY 7:00AM - 9:50AM in Room 828 **Materials** • Test (canvas) **CCC Confer** • Enter virtual classroom • Class archives		5 posts Lab X1 Lab X2

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 Canvas.
- Working students will need to plan ahead to arrange time off from work for the test.
- Test #3 is **mandatory** (even if you have all the points you want)

FINAL EXAMINATIONS SCHEDULE: SPRING 2017, May 15 to May 20

Daytime Classes: All times in bold refer to the beginning times of classes. **MW/Daily** means Monday alone, Wednesday alone, Monday and Wednesday **or any 3** or more days in any combination. **TTH** means Tuesday alone, Thursday alone, or Tuesday and Thursday. **Classes meeting other combinations of days and/or hours not listed must have a final schedule approved by their Division Dean.**

STARTING CLASS TIME/DAY(S)	EXAM HOUR	EXAM DATE
Classes starting between:		
6:30 am and 8:55 am, MW/Daily	7:00 am-9:50 am	Wednesday, May 17
9:00 am and 10:15 am, MW/Daily	7:00 am-9:50 am	Monday, May 15
10:20 am and 11:35 am, MW/Daily	10:00 am-12:50 pm	Wednesday, May 17
11:40 am and 12:55 pm, MW/Daily	10:00 am-12:50 pm	Monday, May 15
1:00 pm and 2:15 pm, MW/Daily	1:00 pm-3:	
2:20 pm and 3:35 pm, MW/Daily	1:00 pm-3:	
3:40 pm and 5:30 pm, MW/Daily	4:00 pm-6:	
6:30 am and 8:55 am, TTh	7:00 am-9:	
9:00 am and 10:15 am, TTh	7:00 am-9:	
10:20 am and 11:35 am, TTh	10:00 am-12	
11:40 am and 12:55 pm, TTH	10:00 am-12	
1:00 pm and 2:15 pm, TTh	1:00 pm-3:	
2:20 pm and 3:35 pm, TTh	1:00 pm-3:	
3:40 pm and 5:30 pm, TTh	4:00 pm-6:	
Friday am	9:00 am-11	
Friday pm	1:00 pm-3:	
Saturday am	9:00 am-11	
Saturday pm	1:00 pm-3:	

CIS 90 Introduction to UNIX/Linux

Provides a technical overview of the UNIX/Linux operating system, including hands-on experience with commands, files, and tools. Recommended Preparation: CIS 1L or CIS 72.
Transfer Credit: Transfers to CSU; UC

Section	Days	Times	Units	Instructor	Room
95746	W	9:00AM-12:05PM	3.00	R.Simms	OL
&	Arr.	Arr.		R.Simms	OL

Section 95746 is an ONLINE course. Meets weekly throughout the semester online during the scheduled times by remote technology with an additional 50 min arranged online lab per week. For details, see instructor's web page at go.cabrillo.edu/online.

95747	W	9:00AM-12:05PM	3.00	R.Simms	828
&	Arr.	Arr.		R.Simms	OL

Section 95747 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.

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.
  - Canvas test, so make sure you can log into Canvas before the test starts so you don't waste valuable time on this activity.

Final Exam (Test #3)

- **Canvas 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 3 Tips

Practice Test

Do the practice test multiple times.

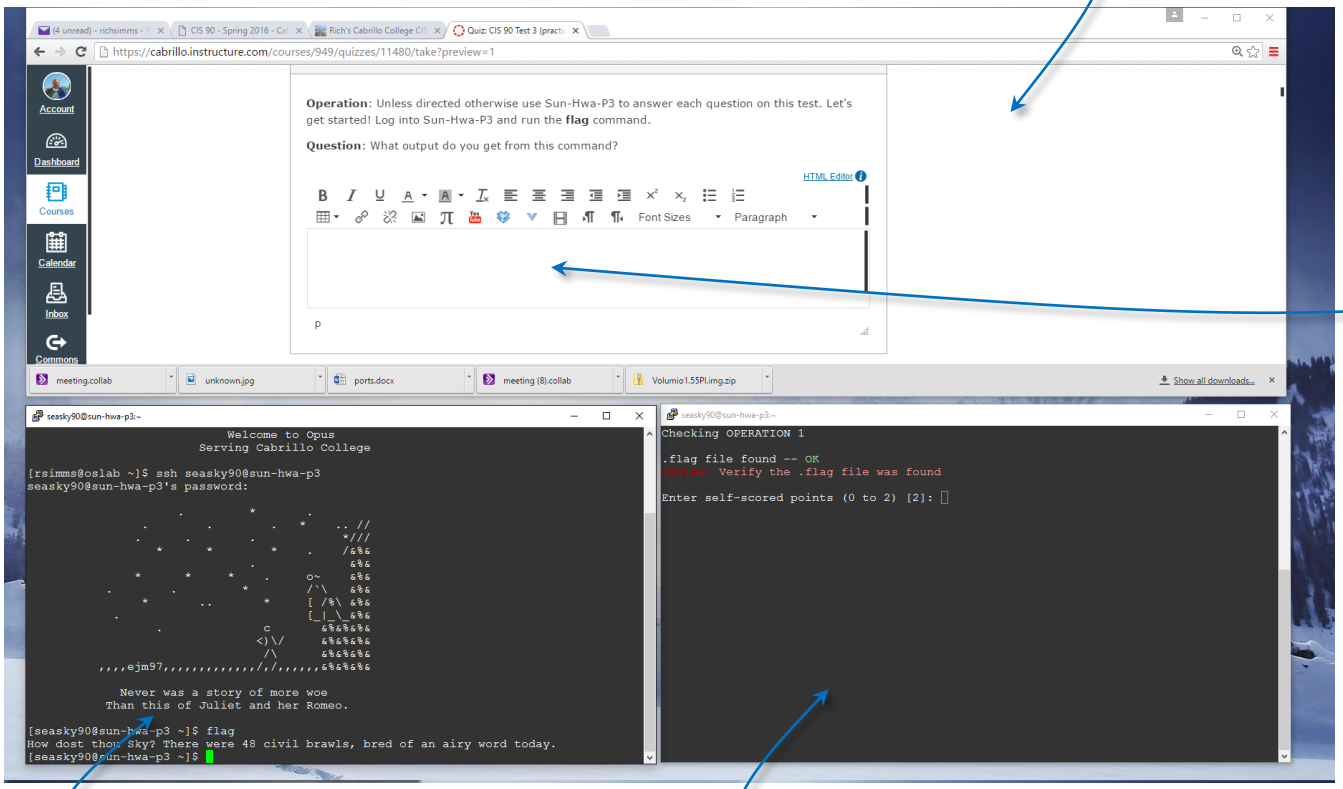
Use the restore command for a fresh start.

Test Tips

Practice Test

Screen Layout

Resize Canvas to show just one question at a time



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 displays that 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
```

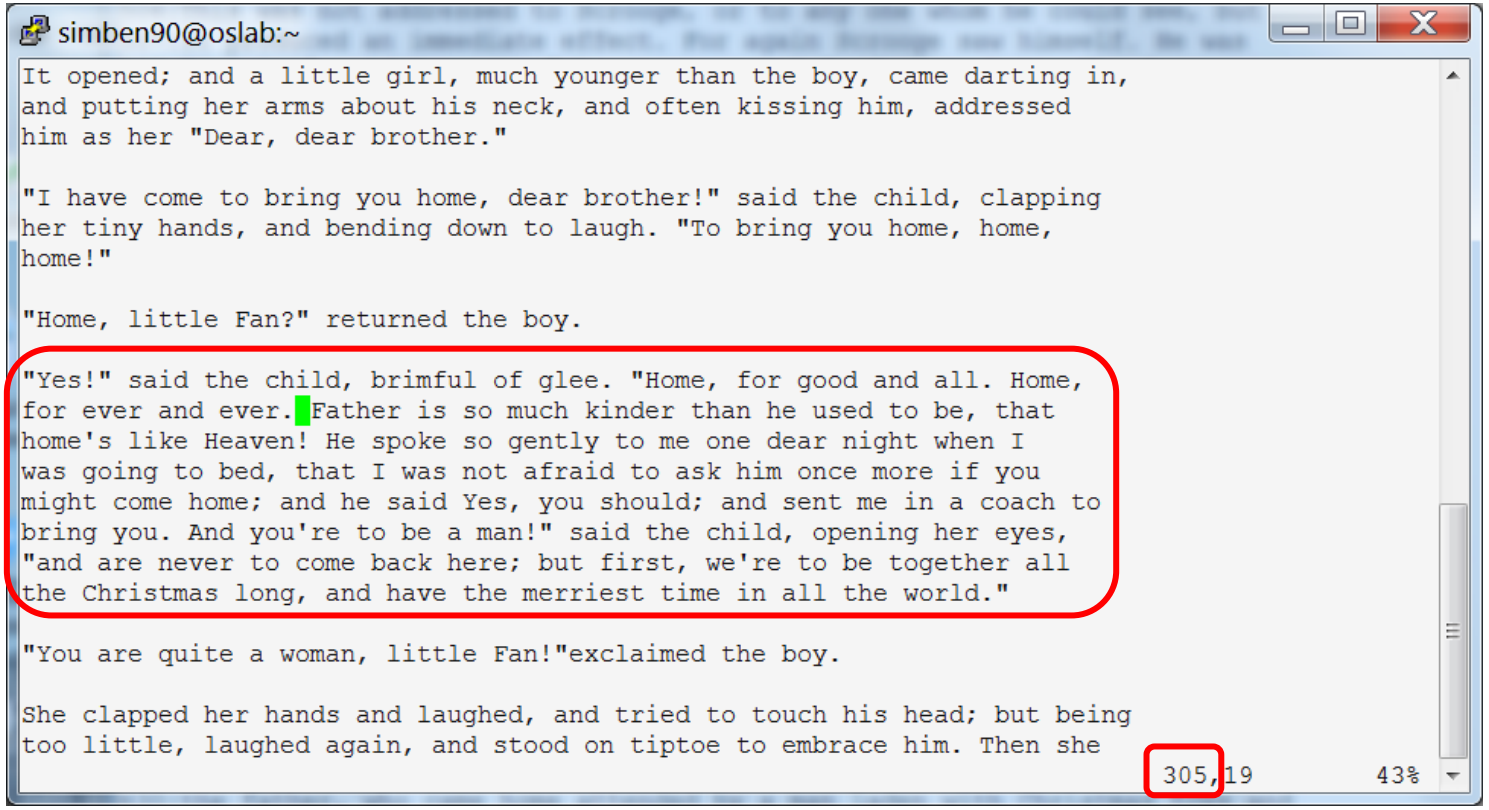
The -n option on grep shows the line number

```
/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

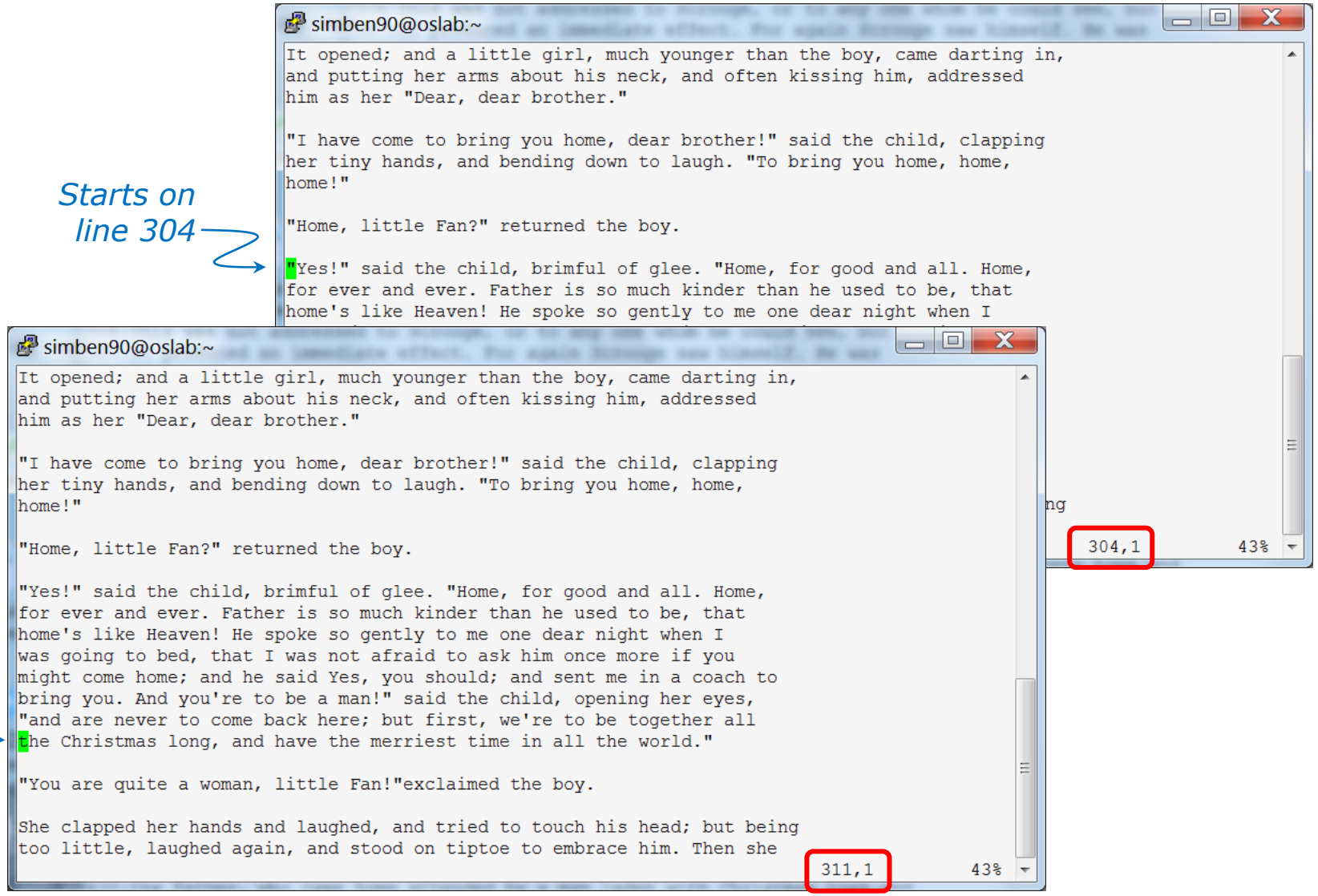
```
vi ../depot/dickens
```



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

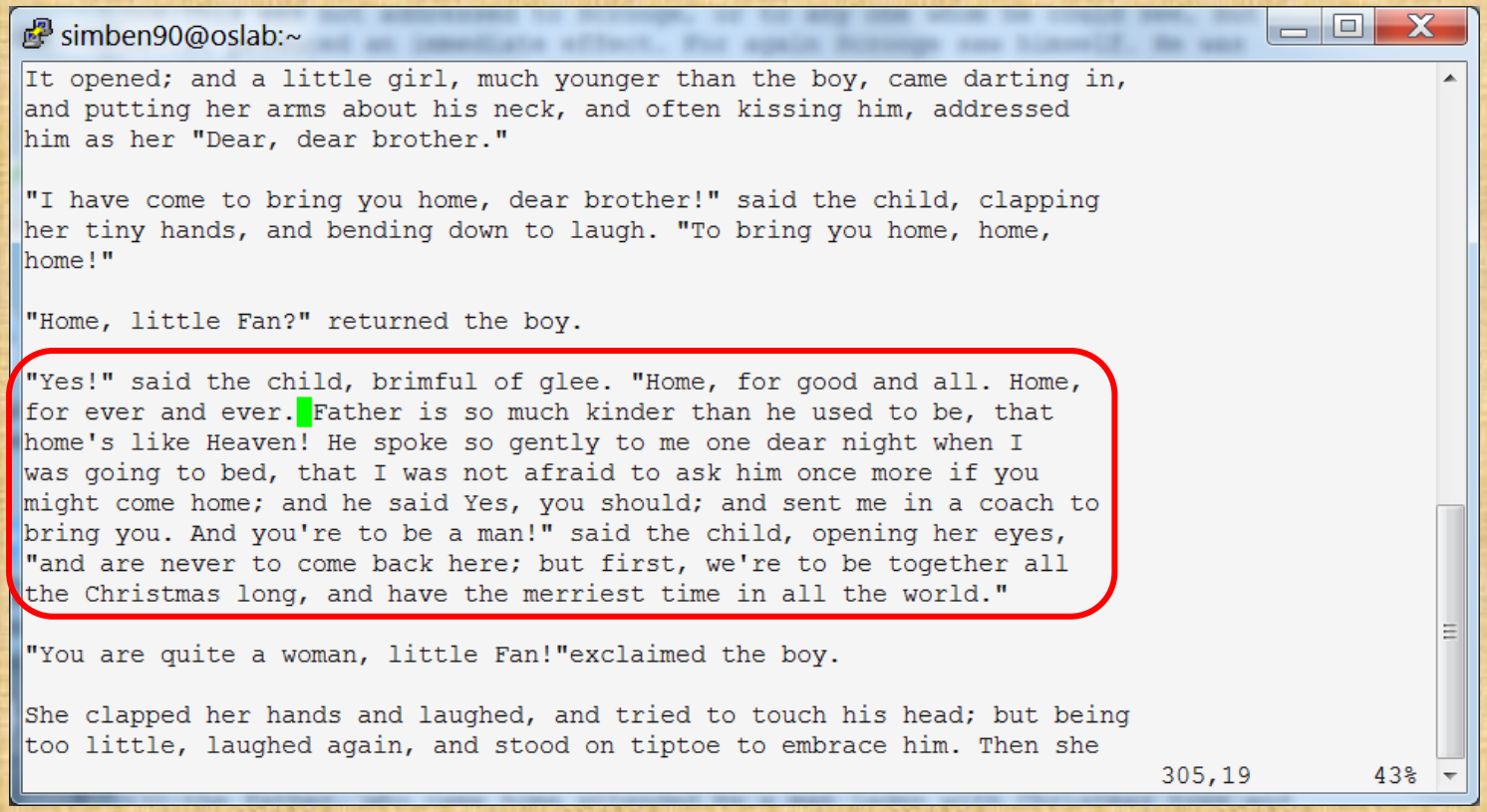
Starts on line 304

Ends on line 311



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

/home/cis90/depot/dickens



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

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

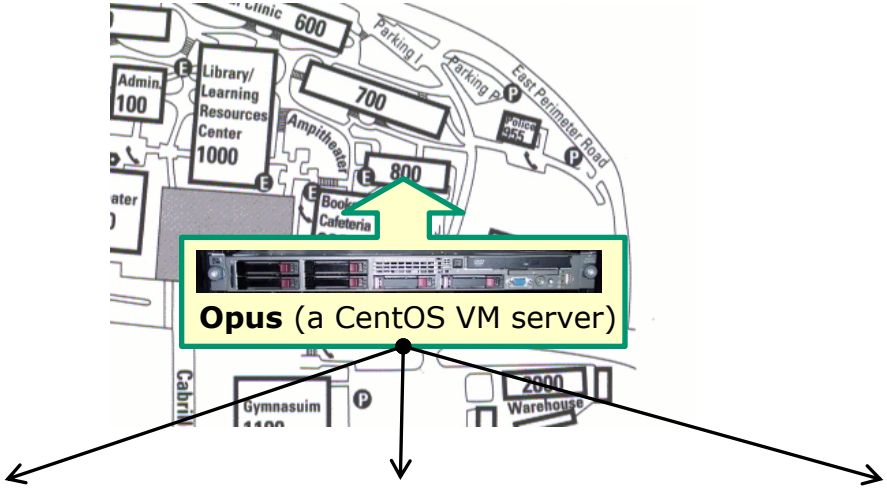
```
/home/cis90/simben $ vi dickens101
/home/cis90/simben $ cat dickens101
head -n311 ../depot/dickens | tail -n8

/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

File transfer continued

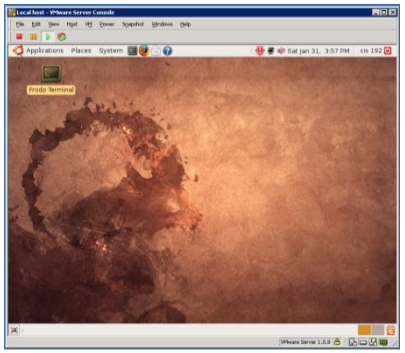
File Transfer

Downloading your Opus files to your home computer



Windows

Mac



Linux

First, let's backup your home directory on Opus

```
/home/cis90/simben $ tar czf simben90.tgz .
tar: .: file changed as we read it
```

The tarball (archive) simben90.tgz is created. The tarball does not include itself. The error message warns the directory changed during backup (new tarball added).

```
/home/cis90/simben $ ls -lh simben90.tgz
-rw-rw-r--. 1 simben90 cis90 79K May 10 16:11 simben90.tgz
```

The –h (human readable) option shows the simben90.tgz tarball is 79K bytes in size

```
/home/cis90/simben $ tar tzf simben90.tgz | wc -l
197
```

197 files were backed up

Next, let's look at some file transfer tools

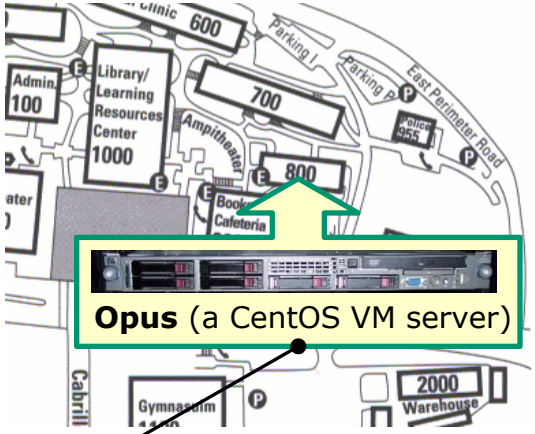
- Between Linux and Windows:
  - **Filezilla** or related applications
  - **PSCP** (Putty SCP) command
- Between Linux and Linux/Mac:
  - **Filezilla** or related applications
  - **scp** command

File Transfer To Windows

FileZilla

File Transfer

Downloading your Opus files to your home computer



Windows

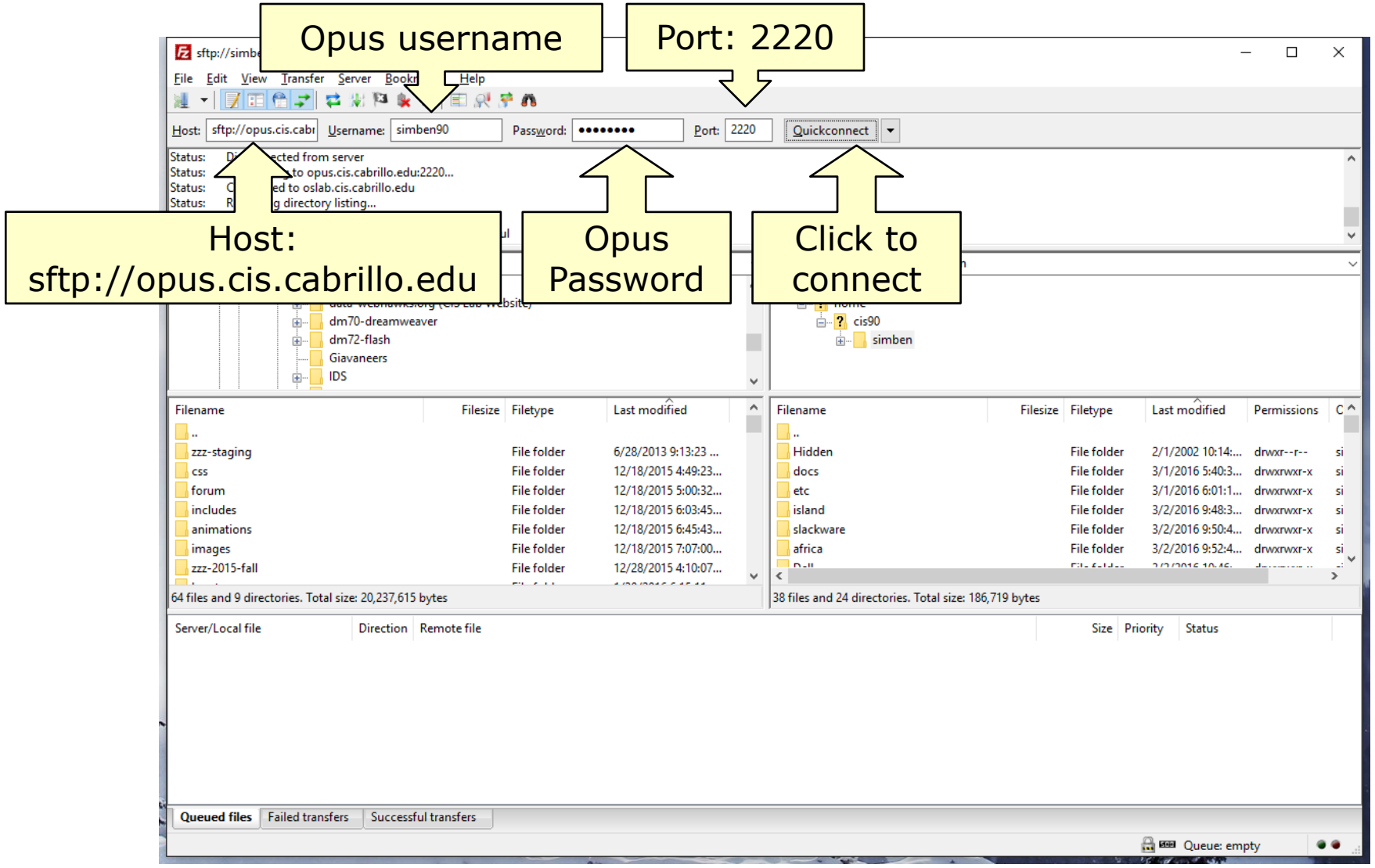
Using FileZilla

File Transfer

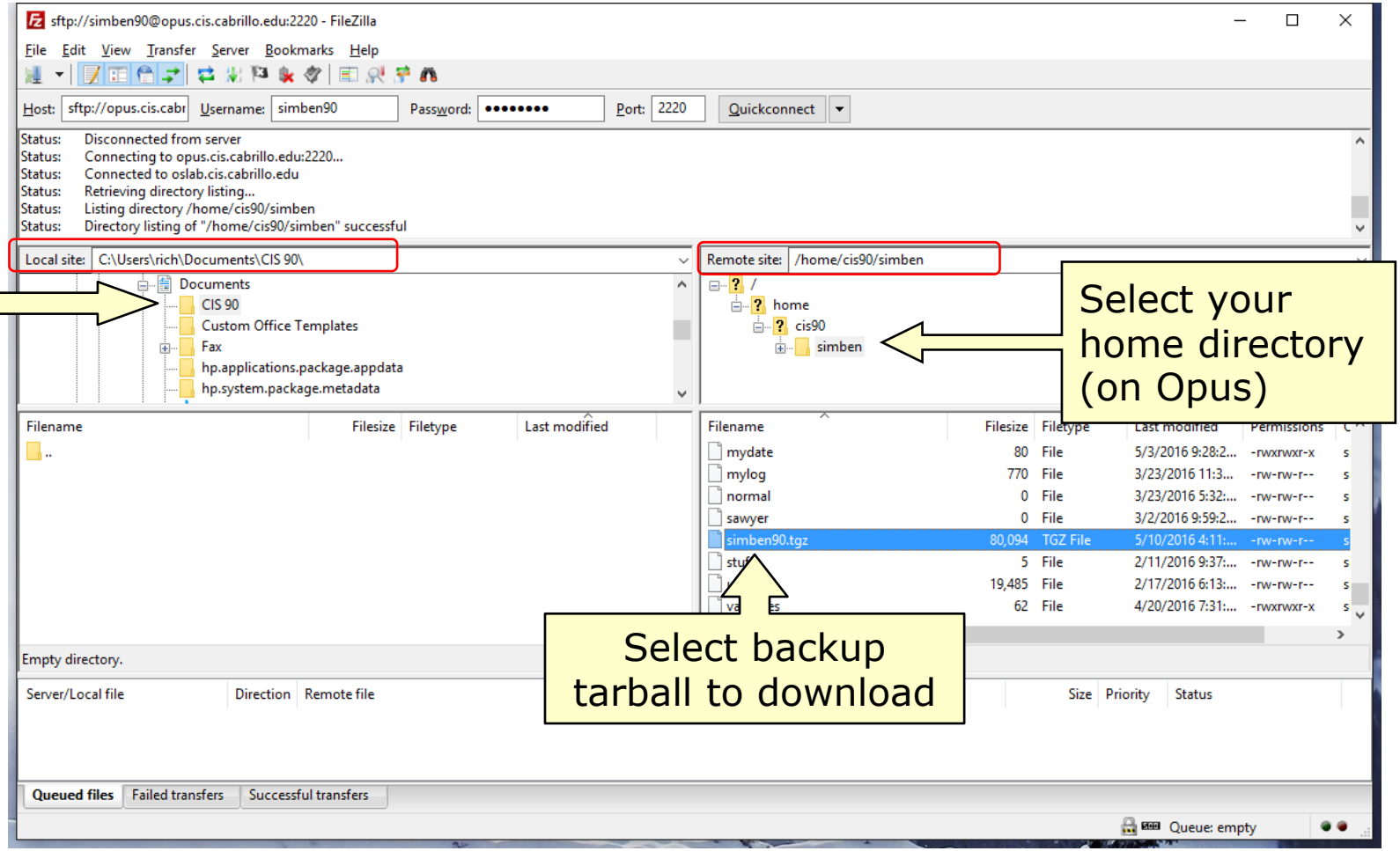
http://filezilla-project.org

Download and install FileZilla on your Windows PC

FileZilla On Windows, connect to your account on Opus

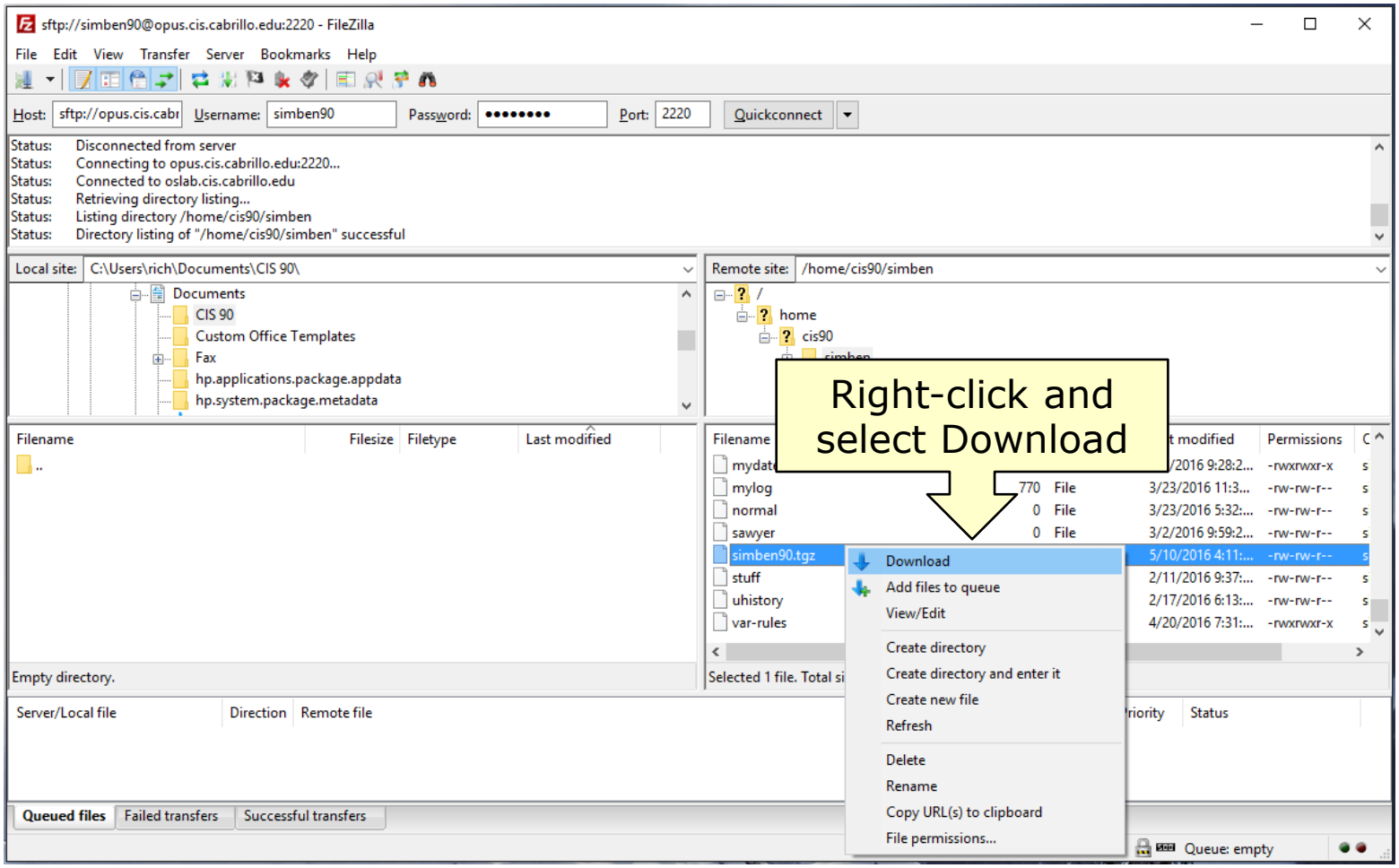


FileZilla Select destination and source directories

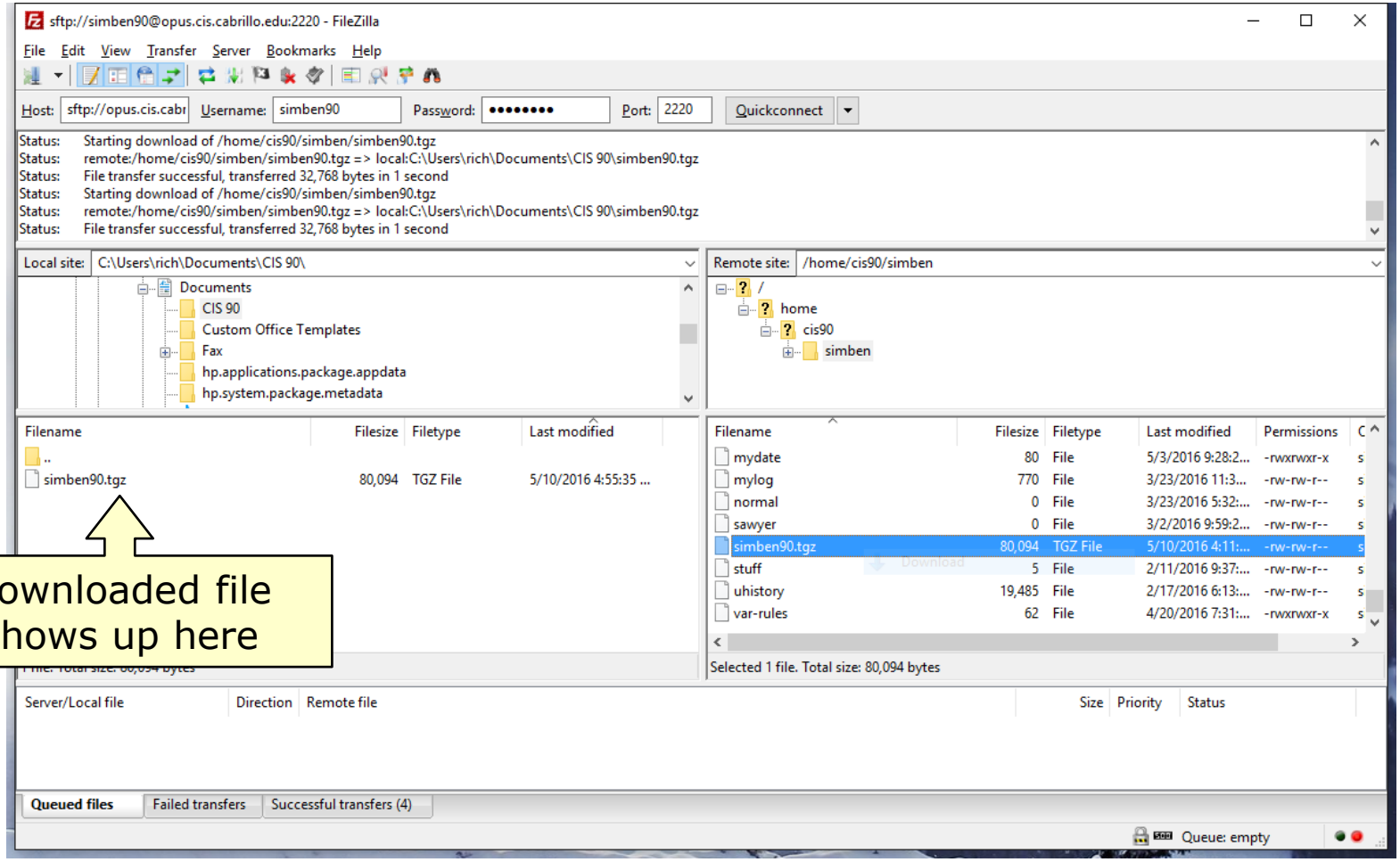


Select local Windows folder on the left and Opus file to download on the right

FileZilla Initiate Download

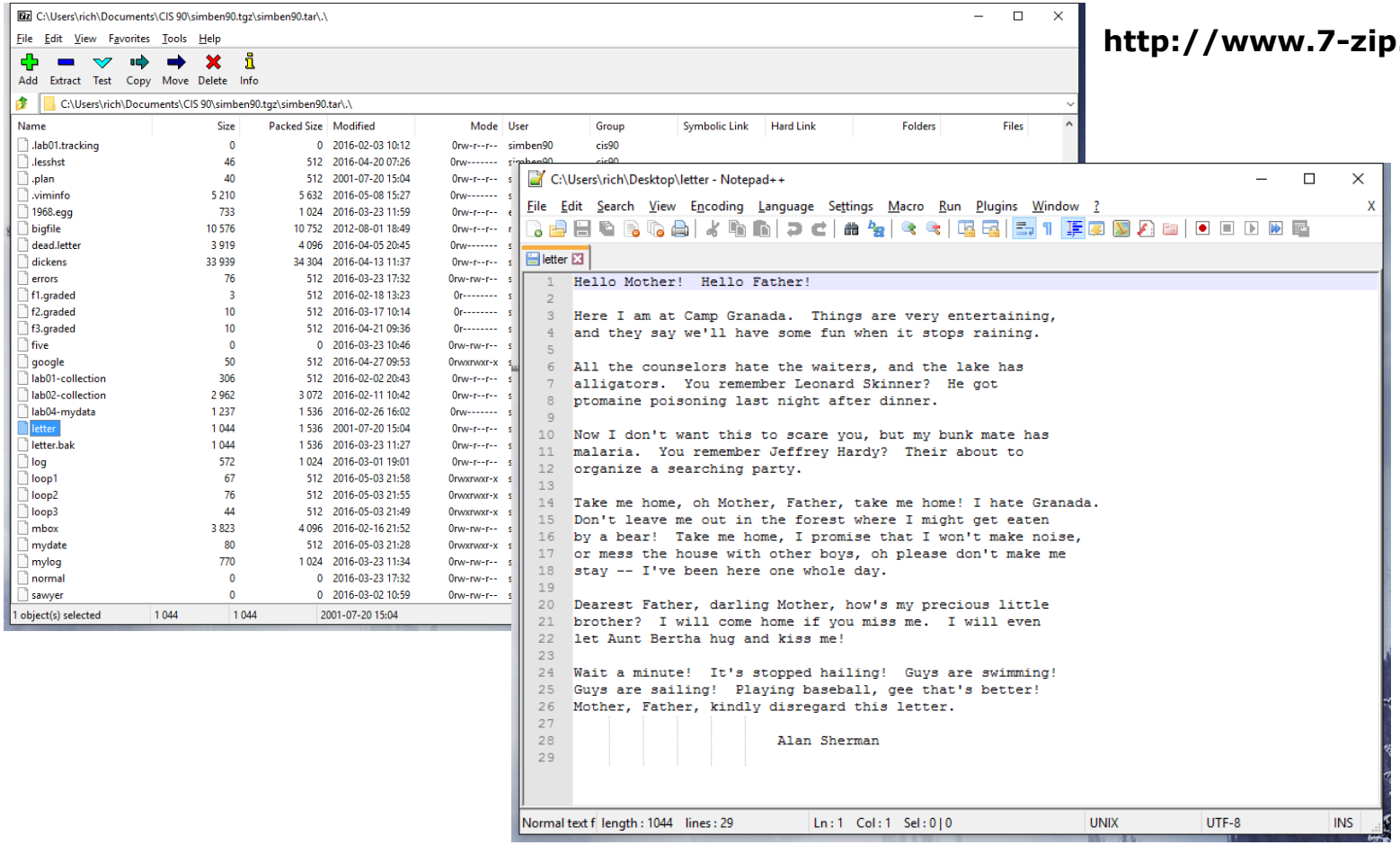


FileZilla Monitor transfer progress



FileZilla **File transfers**

You can use 7-zip to view or extract files from the archive



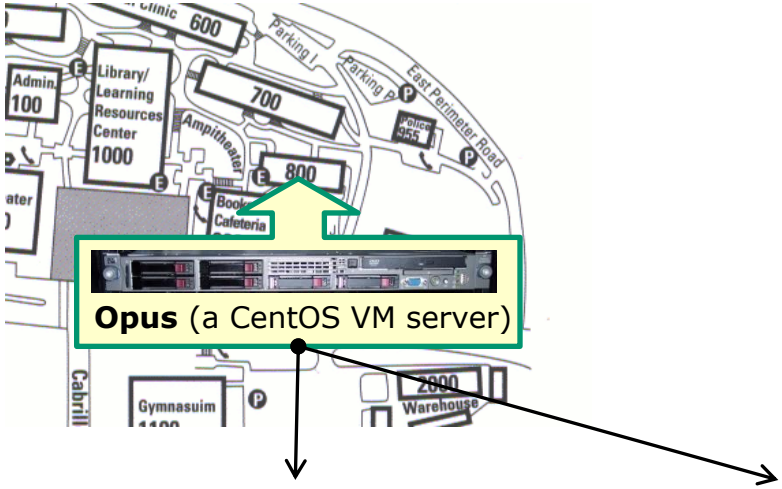
http://www.7-zip.org/

File Transfer Linux or Mac

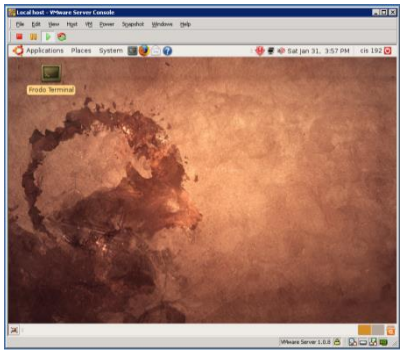
scp

File Transfer

Downloading your Opus files to your home computer



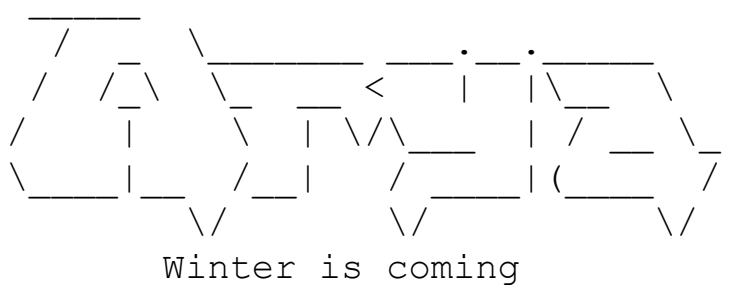
Mac



Linux

File Transfer

Downloading your Opus files to your Linux system




```
Last login: Tue May 10 16:58:45 2016 from opus.cis.cabrillo.edu
cis90@Arya-03:~$ mkdir cis90
cis90@Arya-03:~$ cd cis90
cis90@Arya-03:~/cis90$ scp -P 2220 simben90@opus.cis.cabrillo.edu:simben90.tgz .
simben90@opus.cis.cabrillo.edu's password:
simben90.tgz                                  100%   78KB  78.2KB/s   00:00
cis90@Arya-03:~/cis90$
```

Use the scp command on Linux or Mac to download the tarball on Opus

File Transfer

Extracting files from your backup tarball on your Linux VM

```
cis90@Arya-03:~/cis90$ tar xzf simben90.tgz
cis90@Arya-03:~/cis90$ ls
1968.egg      debian       f2.graded  L7-fun             loop2   sawyer
africa        Dell         f3.graded  lab01-collection   loop3   simben90.tgz
Apple         dickens      five       lab02-collection   mbox    slackware
basket        Directory3   fun        lab04-mydata       misc    stuff
bigfile       docs         google     lesson7            mydate  uhistory
bin           edits        Hidden     letter             mylog   var-rules
cis90_html    errors       HP         letter.bak         normal
class         etc          island     log                poems
dead.letter   f1.graded    jobs       loop1              redhat
cis90@Arya-03:~/cis90$
```

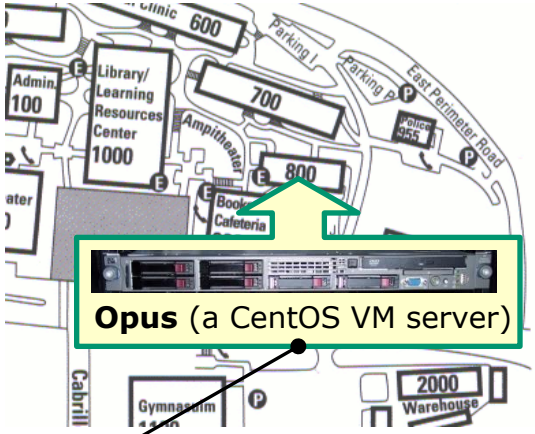
Use the tar command on Linux or Mac to extract the files

File Transfer To Windows

PSCP

File Transfer

Downloading your Opus files to your home computer



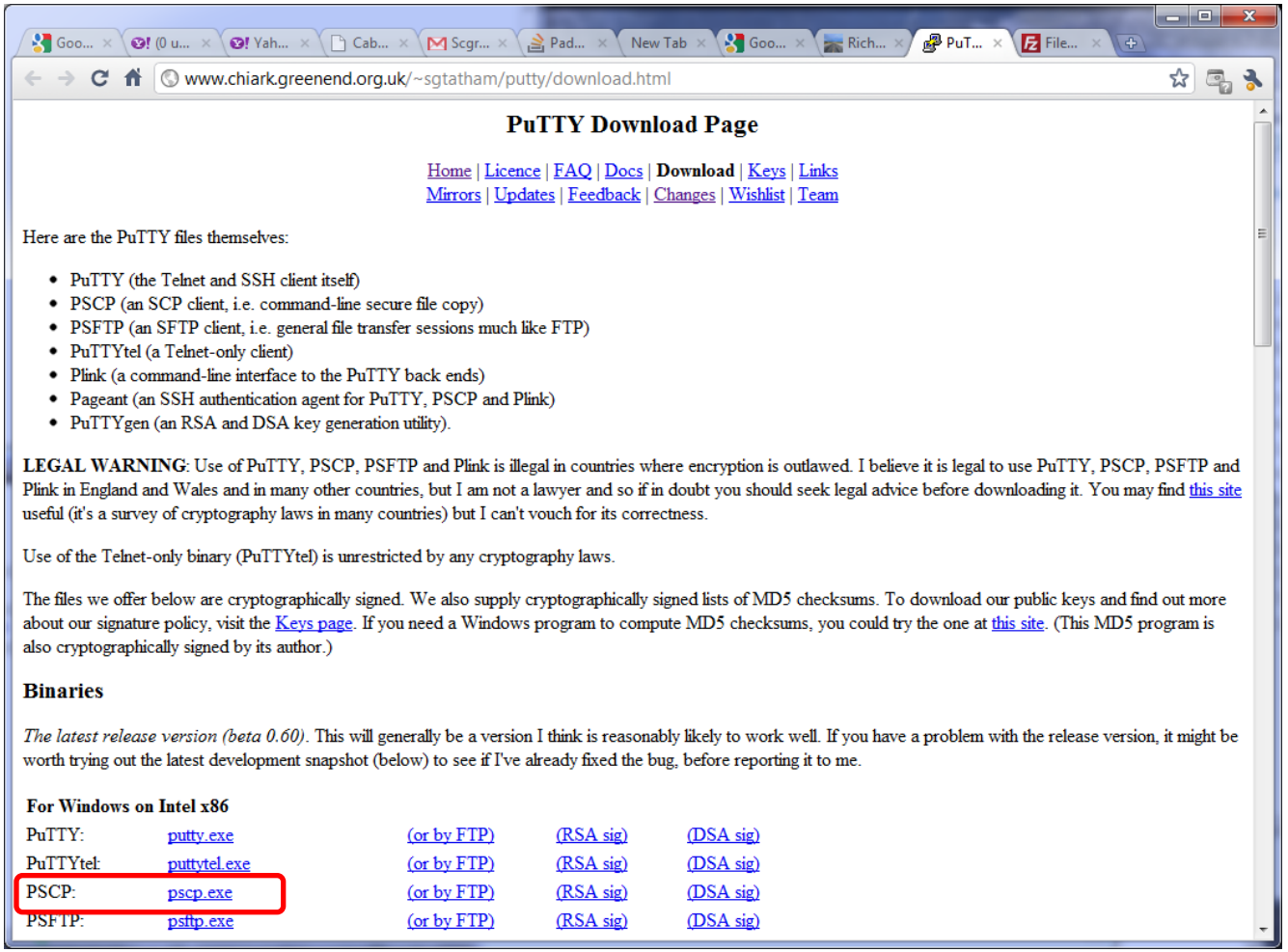
Using PSCP

Windows

PSCP (Putty SCP)

Downloading

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



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

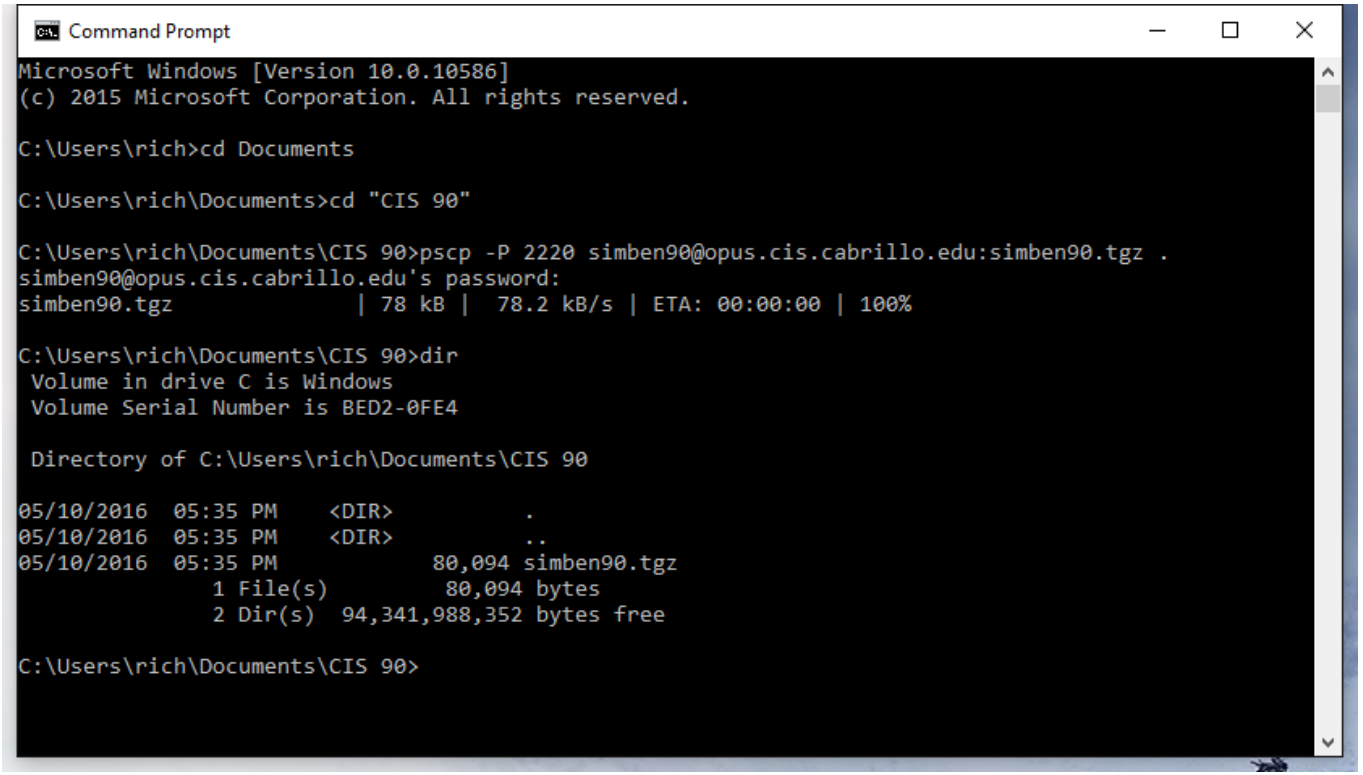
PSCP

PSCP syntax follows **scp** command syntax

Backup file to copy

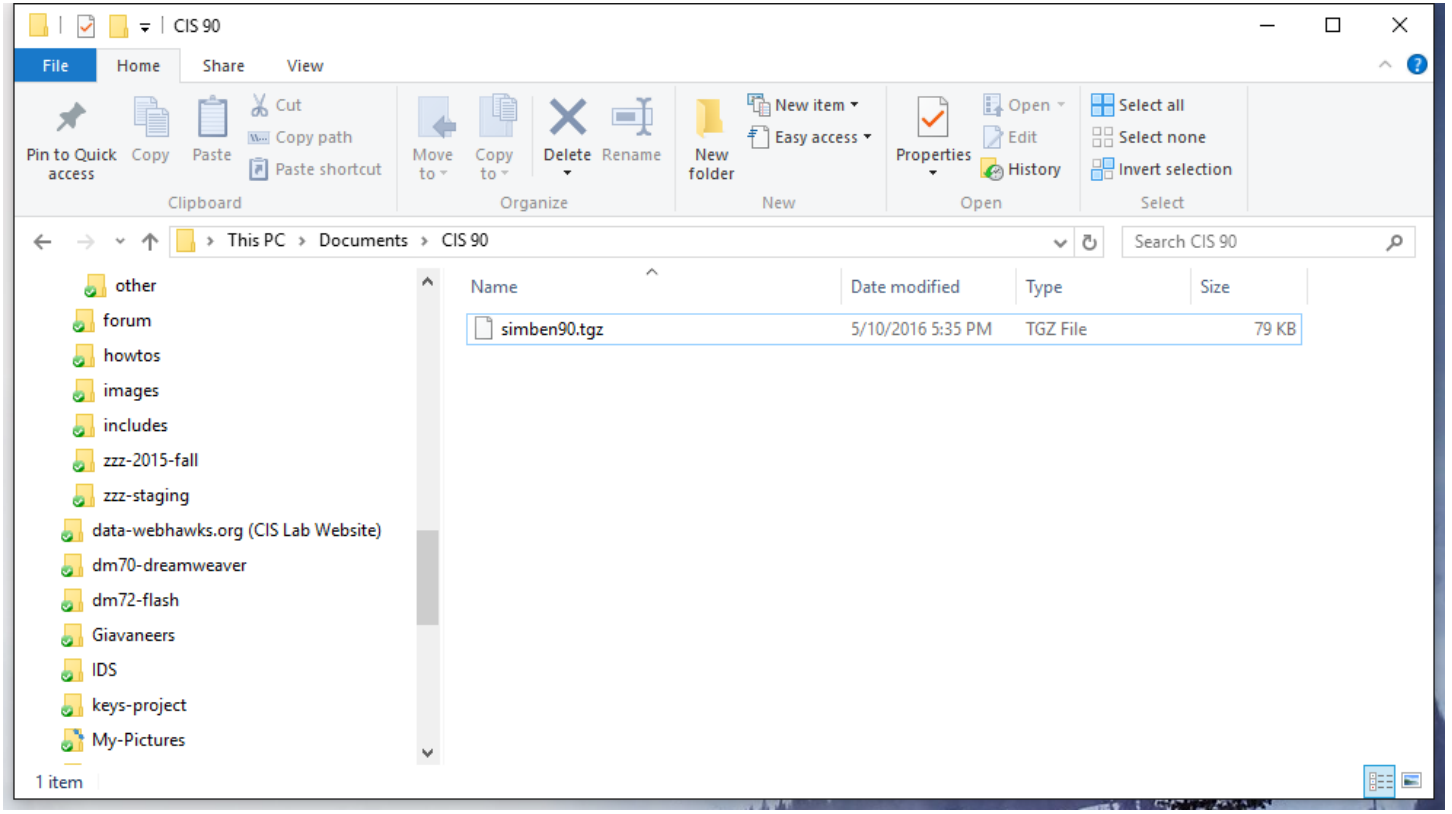
```
pscp -P 2220 simben90@opus.cis.Cabrillo.edu:simben90.tgz .
```

Destination is "here" (the current local directory)



PSCP

Your CIS 90 backup file is now on Windows



Tarball (archive) 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
```

Uncompressed archive file

*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
```

Compressed archive file

*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
```

New tarball is NOT compressed.

New tarball IS compressed.

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 $
```

Using the z option when extracting or viewing compressed tar files

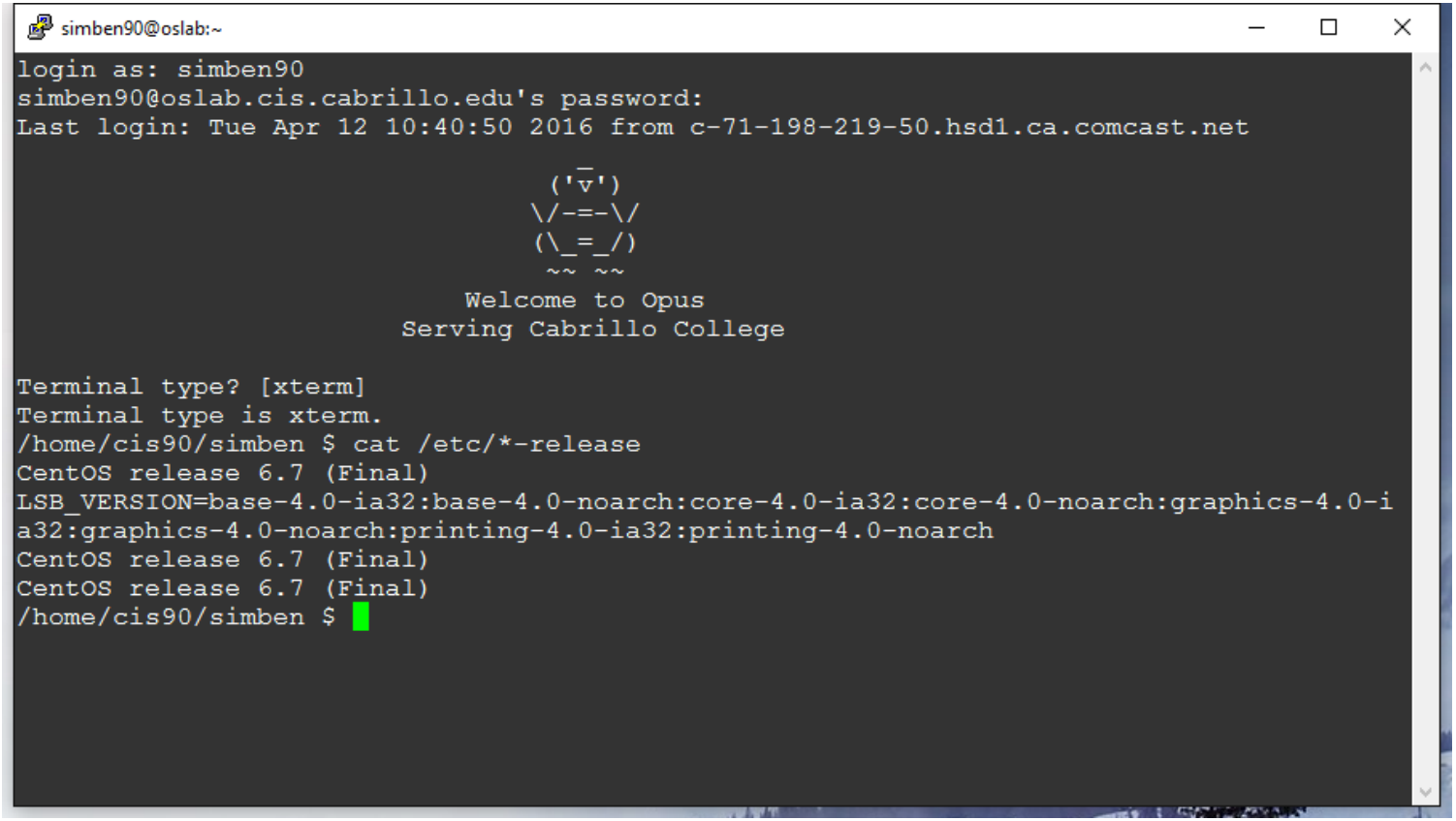
.tar.gz vs .tgz

```
/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 (archive) was compressed

Make your own Opus

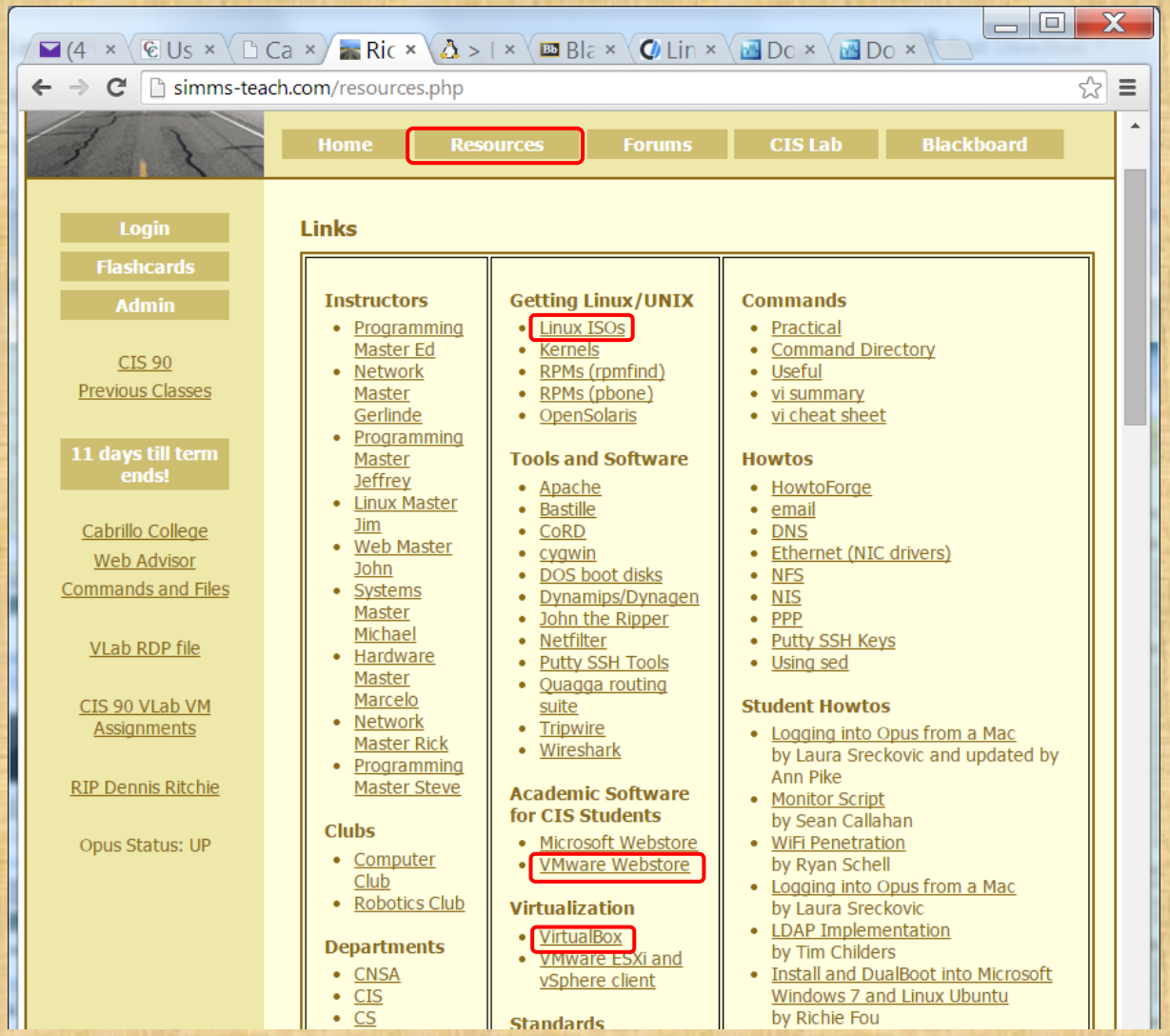


Opus is a CentOS 6.7 Linux system

Ingredients

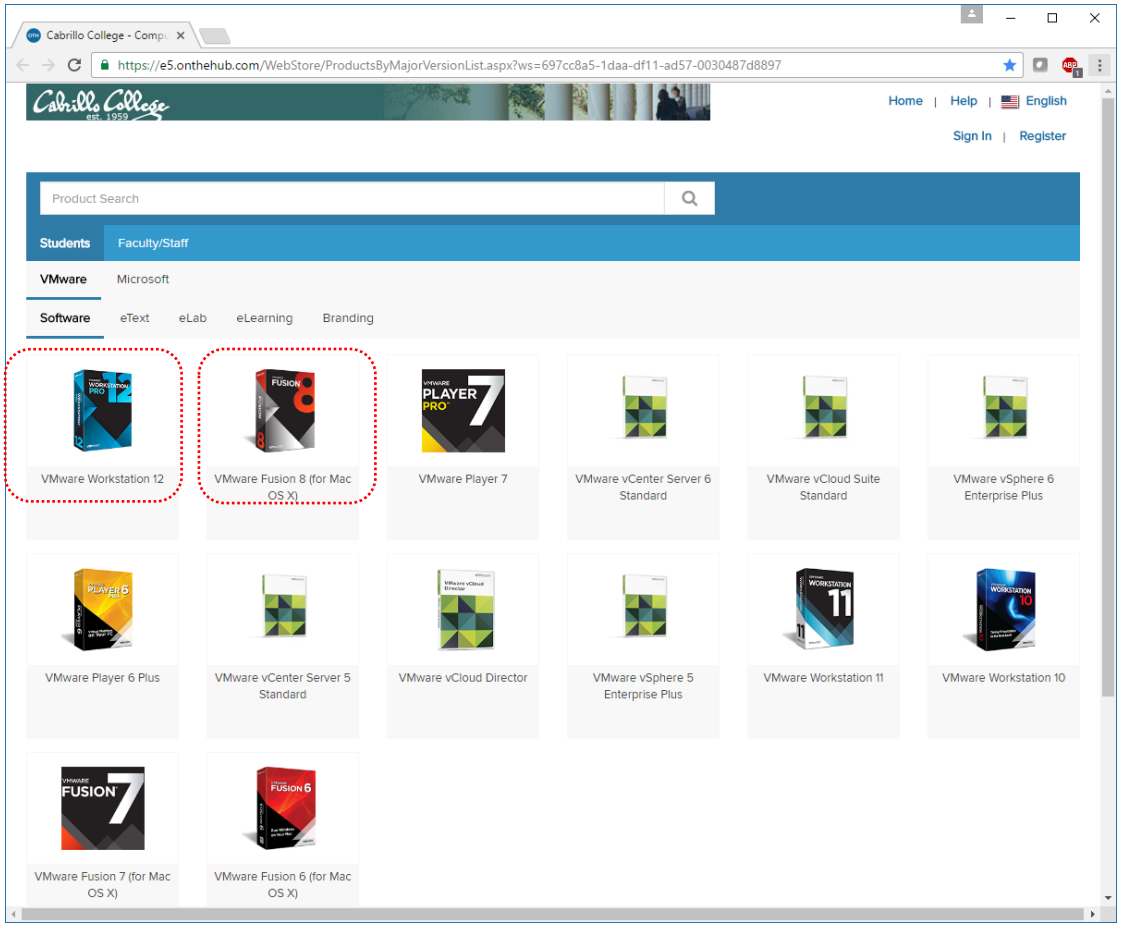
To make your own Opus at home you will need to purchase the following items for your home computer:

- 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



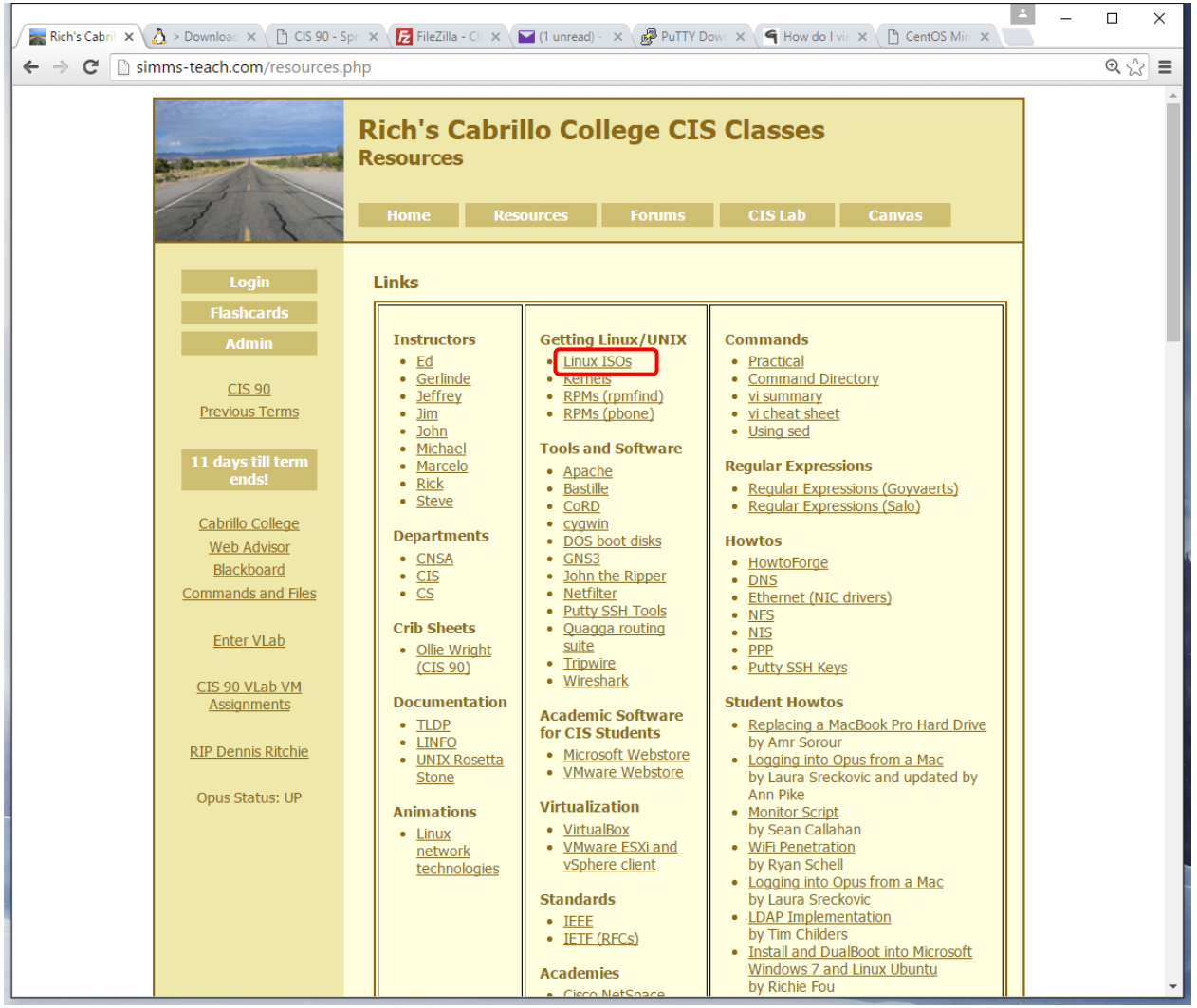
Shopping for the ingredients

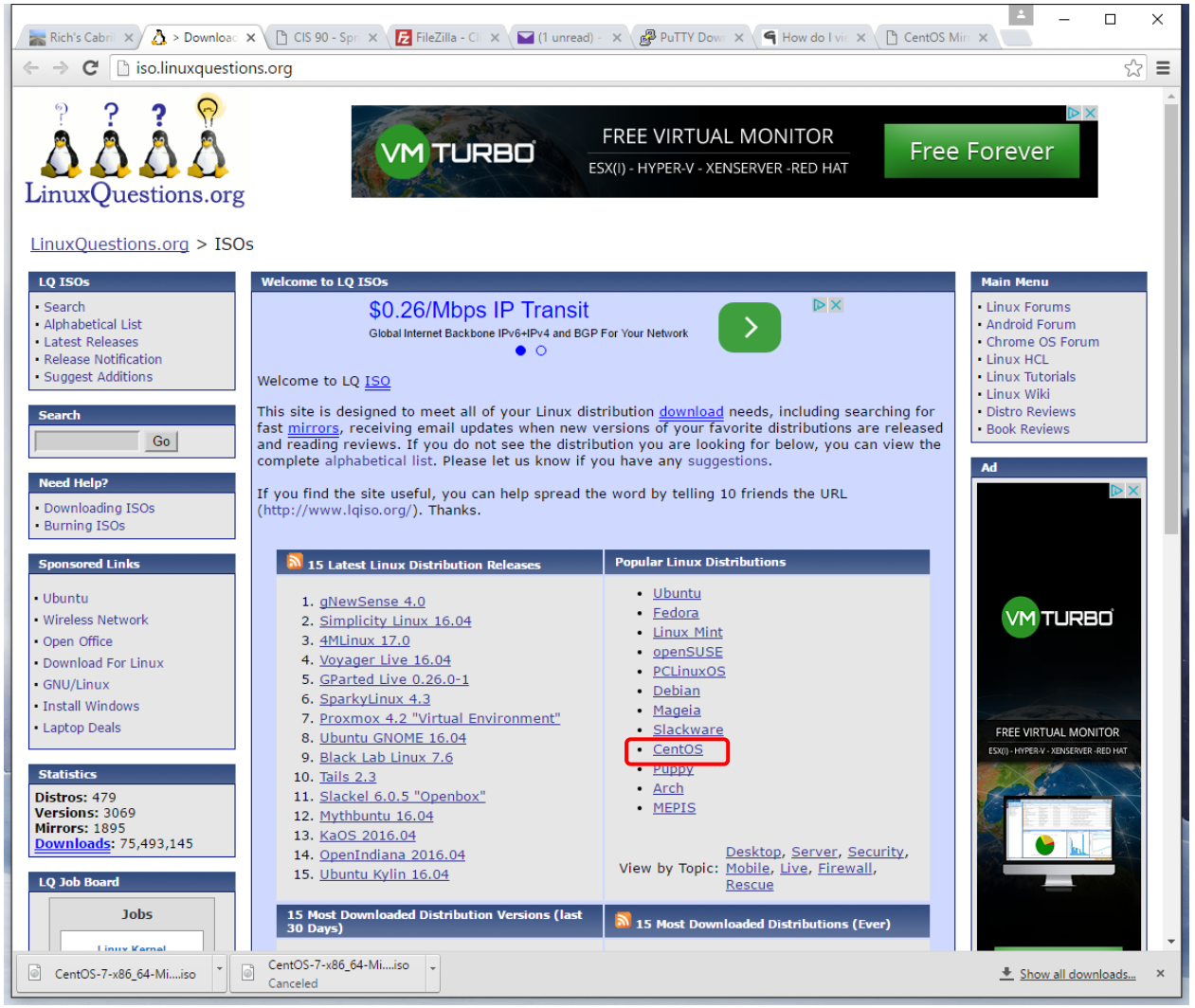
VMware Workstation (Windows) or Fusion (Mac)

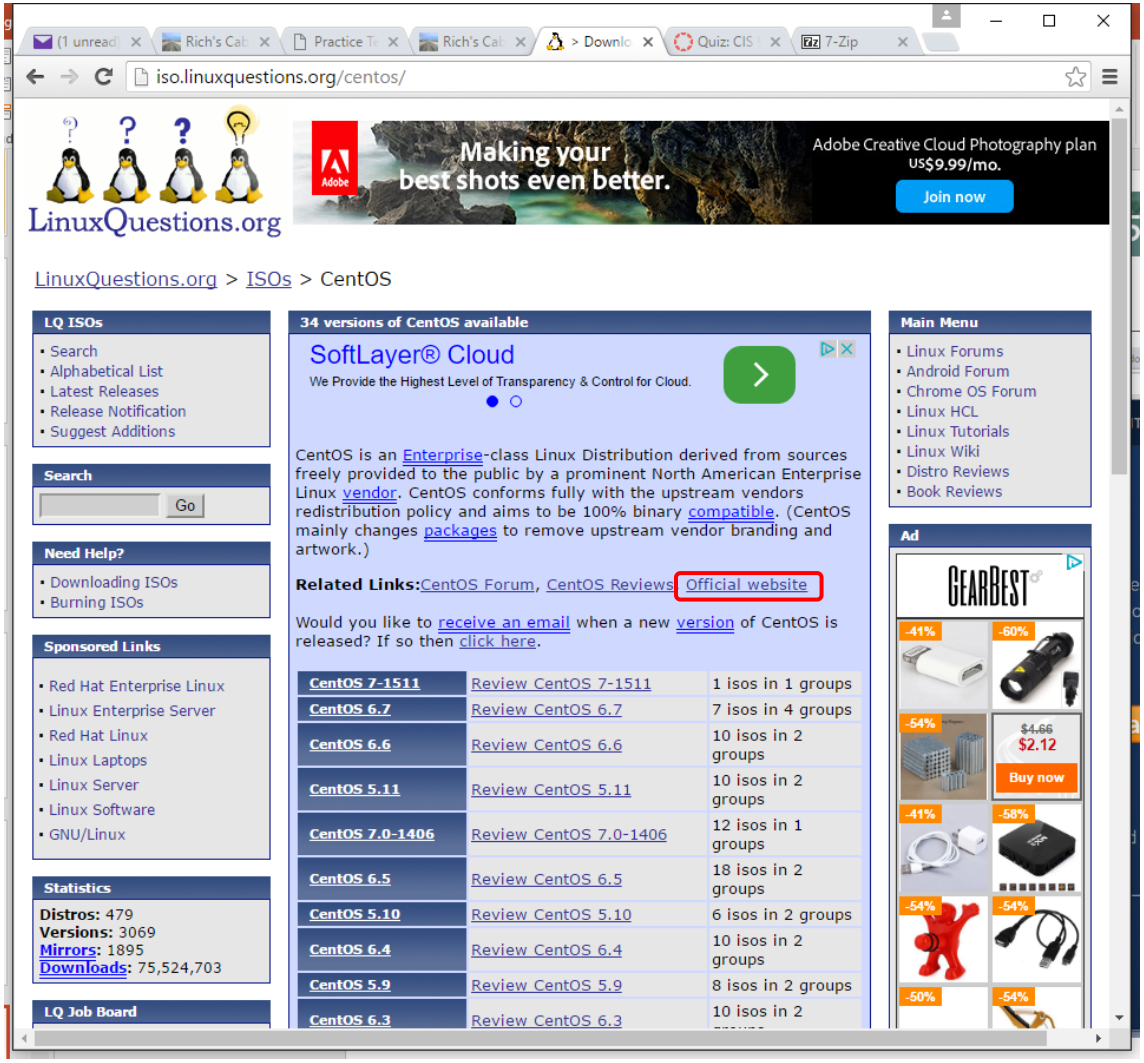


Obtaining VMware Workstation

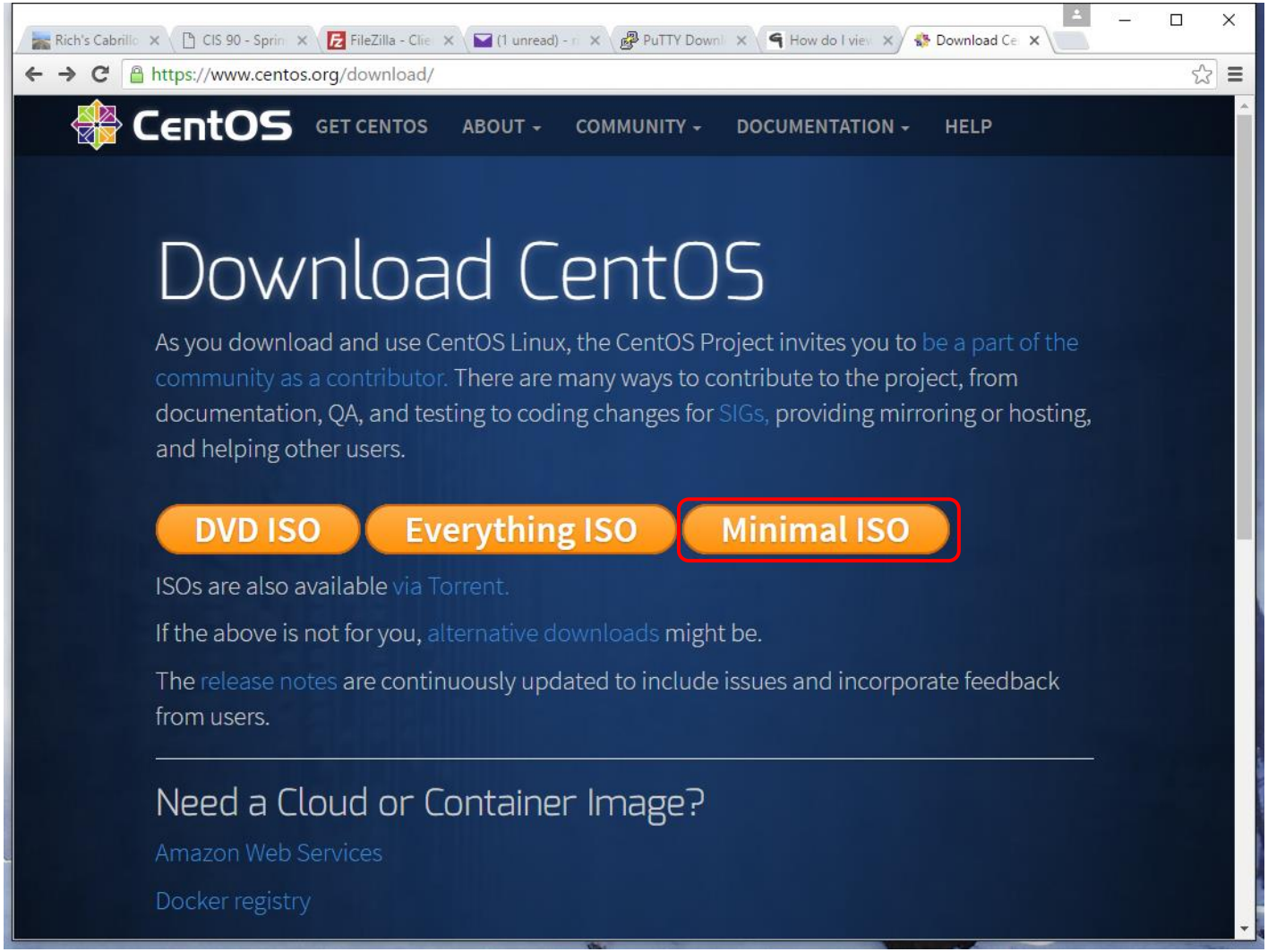
Vmware Workstaton

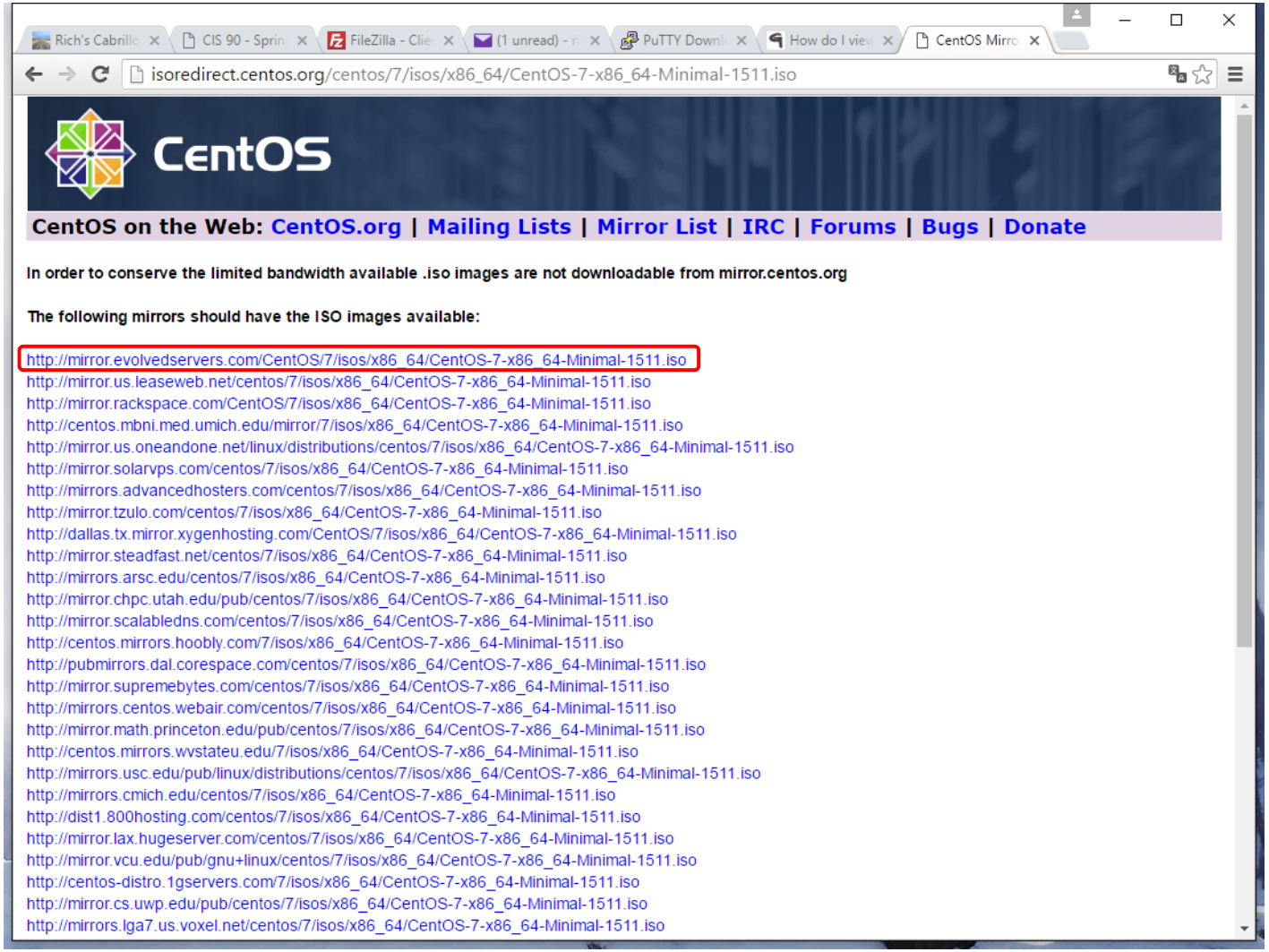

simms-teach.com/resources.php
Rich's Cabrillo College CIS Classes
Resources
Home
Resources
Forums
CIS Lab
Canvas
Login
Flashcards
Admin
CIS 90
Previous Terms
11 days till term ends!
Cabrillo College
Web Advisor
Blackboard
Commands and Files
Enter VLab
CIS 90 VLab VM Assignments
RIP Dennis Ritchie
Opus Status: UP
Links
Instructors
Ed
Gerlinde
Jeffrey
Jim
John
Michael
Marcelo
Rick
Steve
Departments
CNSA
CIS
CS
Crib Sheets
Ollie Wright (CIS 90)
Documentation
TLDP
LINFO
UNIX Rosetta Stone
Animations
Linux network technologies
Getting Linux/UNIX
Linux ISOs
Kernels
RPMs (rpmfind)
RPMs (pbone)
Tools and Software
Apache
Bastille
CoRD
cygwin
DOS boot disks
GNS3
John the Ripper
Netfilter
Putty SSH Tools
Quagga routing suite
Tripwire
Wireshark
Academic Software for CIS Students
Microsoft Webstore
VMware Webstore
Virtualization
VirtualBox
VMware ESXi and vSphere client
Standards
IEEE
IETF (RFCs)
Academies
Commands
Practical
Command Directory
vi summary
vi cheat sheet
Using sed
Regular Expressions
Regular Expressions (Goyvaerts)
Regular Expressions (Salo)
Howtos
HowtoForge
DNS
Ethernet (NIC drivers)
NFS
NIS
PPP
Putty SSH Keys
Student Howtos
Replacing a MacBook Pro Hard Drive by Amr Sorour
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


iso.linuxquestions.org
LinuxQuestions.org
FREE VIRTUAL MONITOR
ESX(I) - HYPER-V - XENSERVER -RED HAT
Free Forever
LinuxQuestions.org > ISOs
LQ ISOs
Search
Alphabetical List
Latest Releases
Release Notification
Suggest Additions
Search
Go
Need Help?
Downloading ISOs
Burning ISOs
Sponsored Links
Ubuntu
Wireless Network
Open Office
Download For Linux
GNU/Linux
Install Windows
Laptop Deals
Statistics
Distros: 479
Versions: 3069
Mirrors: 1895
Downloads: 75,493,145
LQ Job Board
Jobs
Welcome to LQ ISOs
$0.26/Mbps IP Transit
Global Internet Backbone IPv6+IPv4 and BGP For Your Network
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
1. gNewSense 4.0
2. Simplicity Linux 16.04
3. 4MLinux 17.0
4. Voyager Live 16.04
5. GParted Live 0.26.0-1
6. SparkyLinux 4.3
7. Proxmox 4.2 "Virtual Environment"
8. Ubuntu GNOME 16.04
9. Black Lab Linux 7.6
10. Tails 2.3
11. Slackel 6.0.5 "Openbox"
12. Mythbuntu 16.04
13. KaOS 2016.04
14. OpenIndiana 2016.04
15. Ubuntu Kylin 16.04
Popular Linux Distributions
Ubuntu
Fedora
Linux Mint
openSUSE
PCLinuxOS
Debian
Mageia
Slackware
CentOS
Puppy
Arch
MEPIS
View by Topic: Desktop, Server, Security, Mobile, Live, Firewall, Rescue
15 Most Downloaded Distribution Versions (last 30 Days)
15 Most Downloaded Distributions (Ever)
Main Menu
Linux Forums
Android Forum
Chrome OS Forum
Linux HCL
Linux Tutorials
Linux Wiki
Distro Reviews
Book Reviews
Ad
FREE VIRTUAL MONITOR
ESX(I) - HYPER-V - XENSERVER -RED HAT
CentOS-7-x86_64-Mi....iso
CentOS-7-x86_64-Mi....iso
Canceled
Show all downloads...

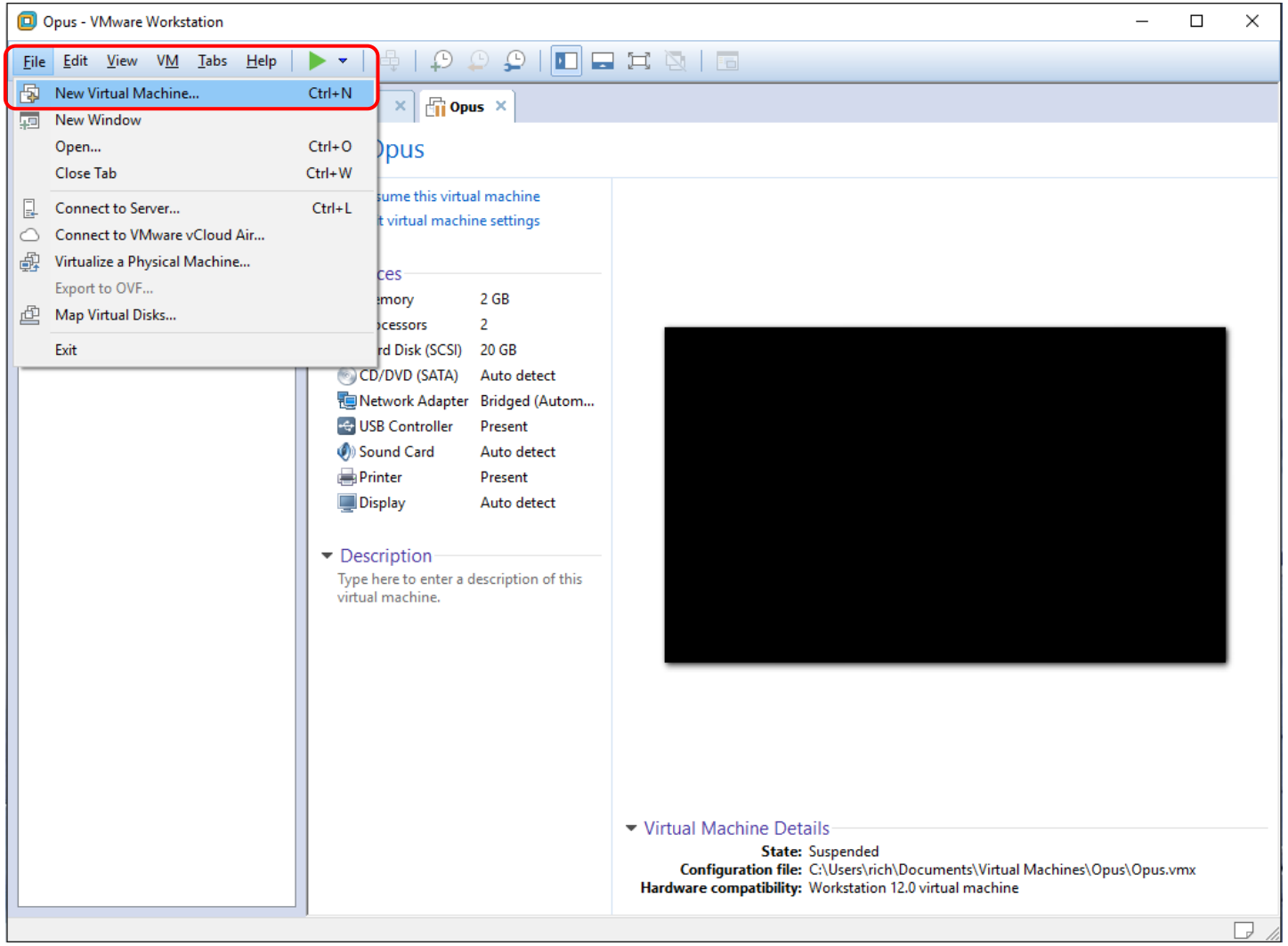

iso.linuxquestions.org/centos/
LinuxQuestions.org
Making your best shots even better.
Adobe Creative Cloud Photography plan US$9.99/mo.
Join now
LinuxQuestions.org > ISOs > CentOS
LQ ISOs
Search
Alphabetical List
Latest Releases
Release Notification
Suggest Additions
Search
Go
Need Help?
Downloading ISOs
Burning ISOs
Sponsored Links
Red Hat Enterprise Linux
Linux Enterprise Server
Red Hat Linux
Linux Laptops
Linux Server
Linux Software
GNU/Linux
Statistics
Distros: 479
Versions: 3069
Mirrors: 1895
Downloads: 75,524,703
LQ Job Board
34 versions of CentOS available
SoftLayer® Cloud
We Provide the Highest Level of Transparency & Control for Cloud.
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 vendors redistribution policy and aims to be 100% binary compatible. (CentOS mainly changes packages to remove upstream vendor branding and artwork.)
Related Links:CentOS Forum, CentOS Reviews, Official website
Would you like to receive an email when a new version of CentOS is released? If so then click here.
CentOS 7-1511 Review CentOS 7-1511 1 isos in 1 groups
CentOS 6.7 Review CentOS 6.7 7 isos in 4 groups
CentOS 6.6 Review CentOS 6.6 10 isos in 2 groups
CentOS 5.11 Review CentOS 5.11 10 isos in 2 groups
CentOS 7.0-1406 Review CentOS 7.0-1406 12 isos in 1 groups
CentOS 6.5 Review CentOS 6.5 18 isos in 2 groups
CentOS 5.10 Review CentOS 5.10 6 isos in 2 groups
CentOS 6.4 Review CentOS 6.4 10 isos in 2 groups
CentOS 5.9 Review CentOS 5.9 8 isos in 2 groups
CentOS 6.3 Review CentOS 6.3 10 isos in 2
Main Menu
Linux Forums
Android Forum
Chrome OS Forum
Linux HCL
Linux Tutorials
Linux Wiki
Distro Reviews
Book Reviews
Ad
GEARBEST
-41%
-60%
-54%
$4.66
$2.12
Buy now
-41%
-58%
-54%
-54%
-50%
-54%

https://www.centos.org
CentOS
GET CENTOS
ABOUT
COMMUNITY
DOCUMENTATION
HELP
The CentOS Project
The CentOS Project is a community-driven free software effort focused on delivering a robust open source ecosystem. For users, we offer a consistent manageable platform that suits a wide variety of deployments. For open source communities, we offer a solid, predictable base to build upon, along with extensive resources to build, test, release, and maintain their code.
We're also expanding the availability of CentOS images across a number of vendors, providing official images for Amazon, Google, and more. For self-hosted cloud, we also provide a generic cloud-init enabled image.
For more information about updates and improvements in CentOS 7, please check out the release notes or the release announcement in the mailing list archive.
Get CentOS Now

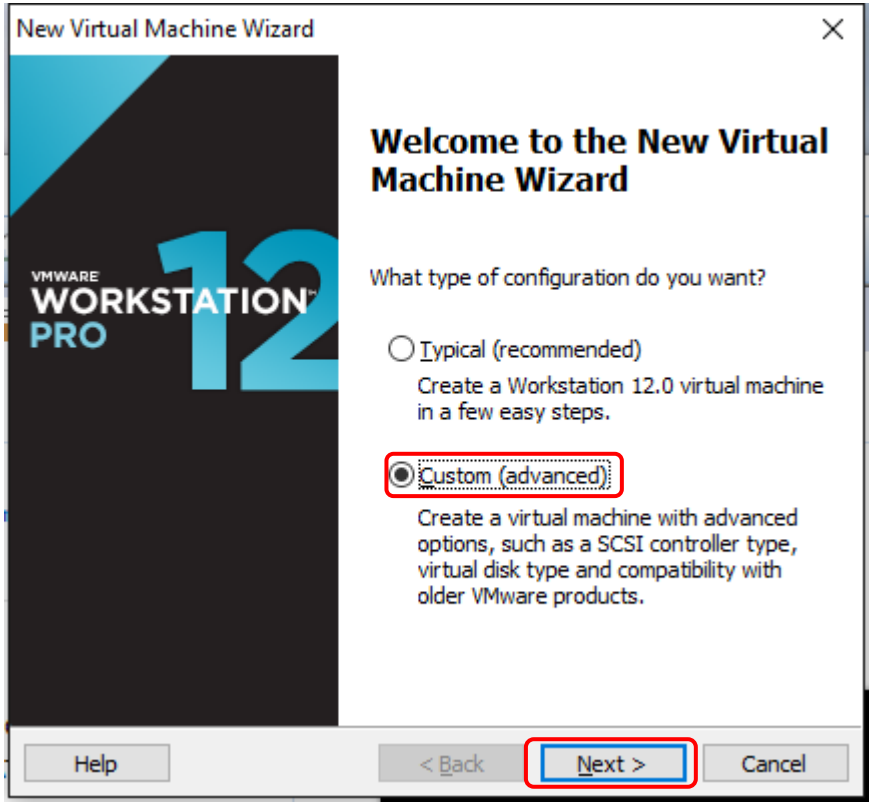

Rich's Cabrillo
CIS 90 - Sprin
FileZilla - Clie
(1 unread) - r
PuTTY Downl
How do I viev
Download Ce
https://www.centos.org/download/
CentOS
GET CENTOS
ABOUT
COMMUNITY
DOCUMENTATION
HELP
Download CentOS
As you download and use CentOS Linux, the CentOS Project invites you to be a part of the community as a contributor. There are many ways to contribute to the project, from documentation, QA, and testing to coding changes for SIGs, providing mirroring or hosting, and helping other users.
DVD ISO
Everything ISO
Minimal ISO
ISOs are also available via Torrent.
If the above is not for you, alternative downloads might be.
The release notes are continuously updated to include issues and incorporate feedback from users.
Need a Cloud or Container Image?
Amazon Web Services
Docker registry



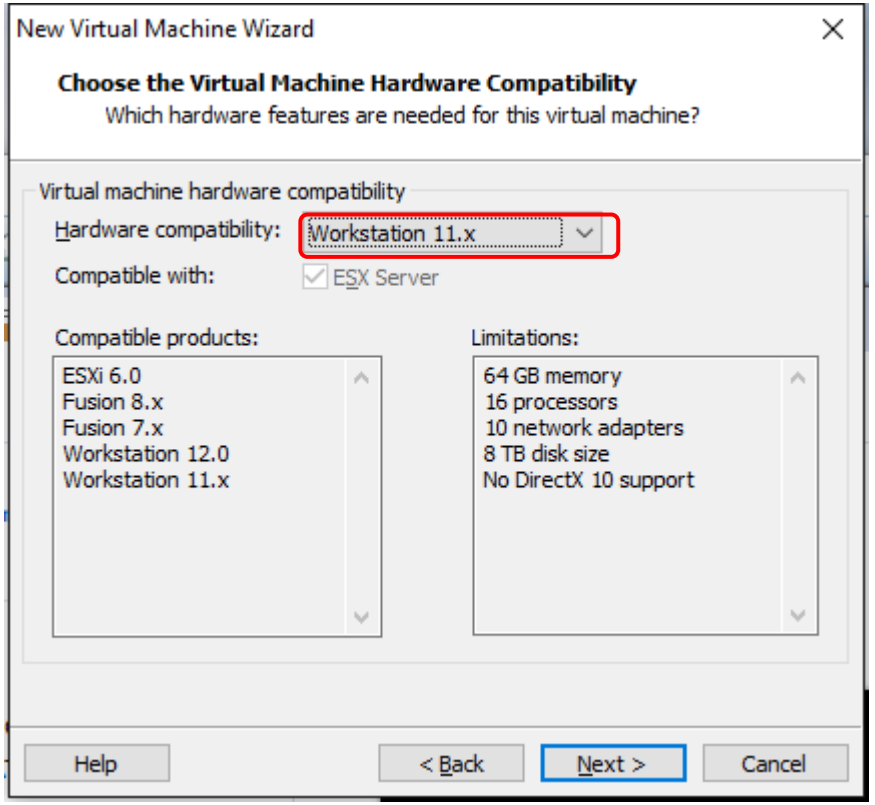
Pick a mirror and download ISO file



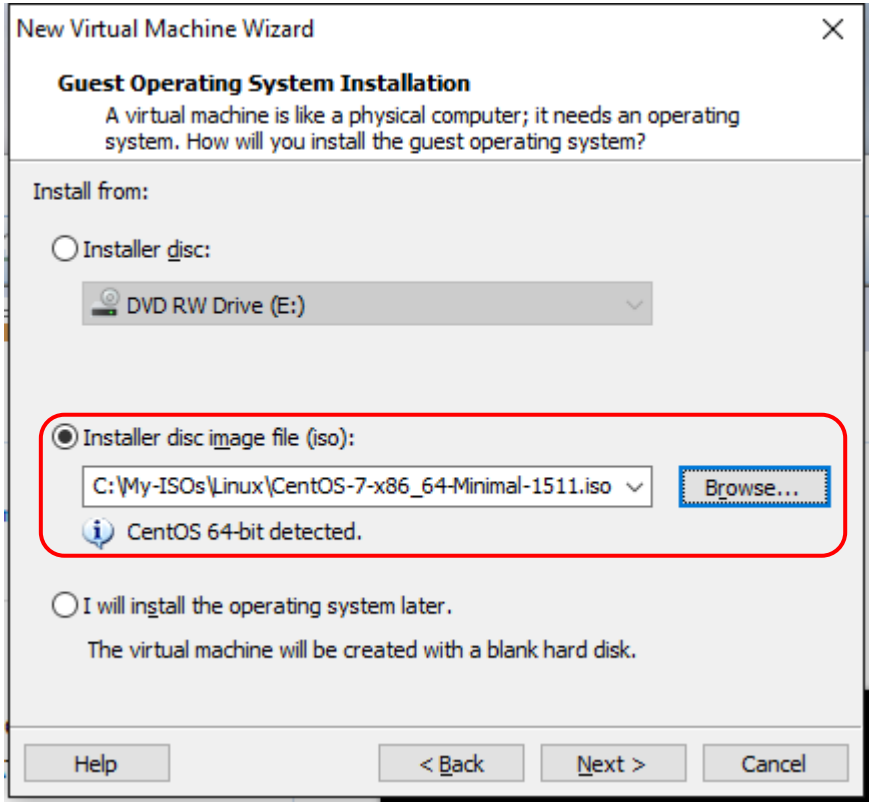
Create new VM

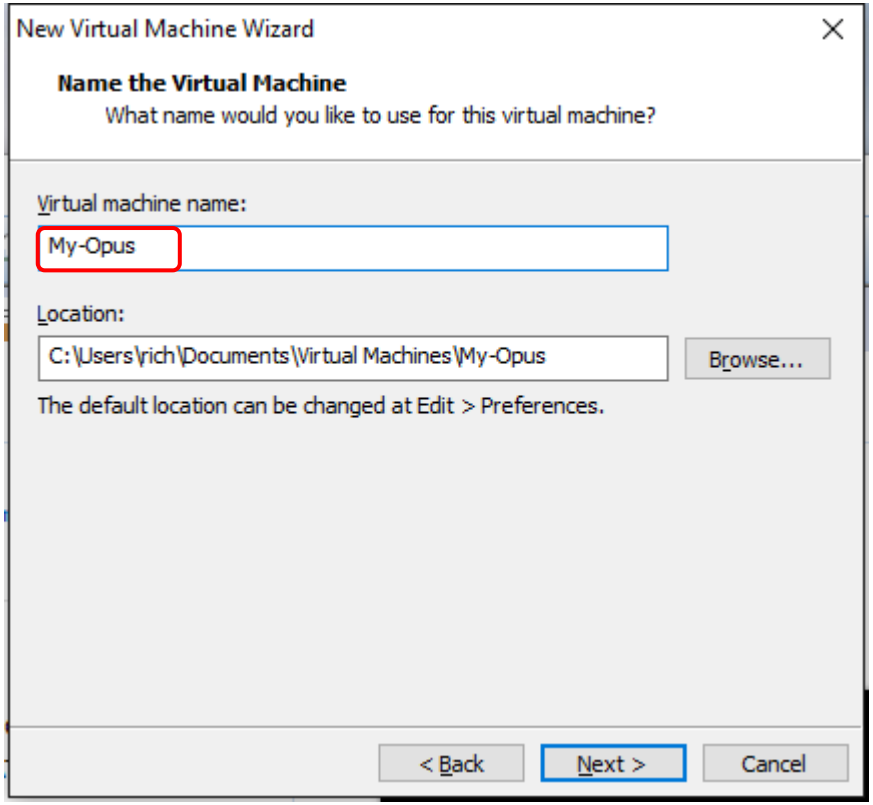


Custom configuration



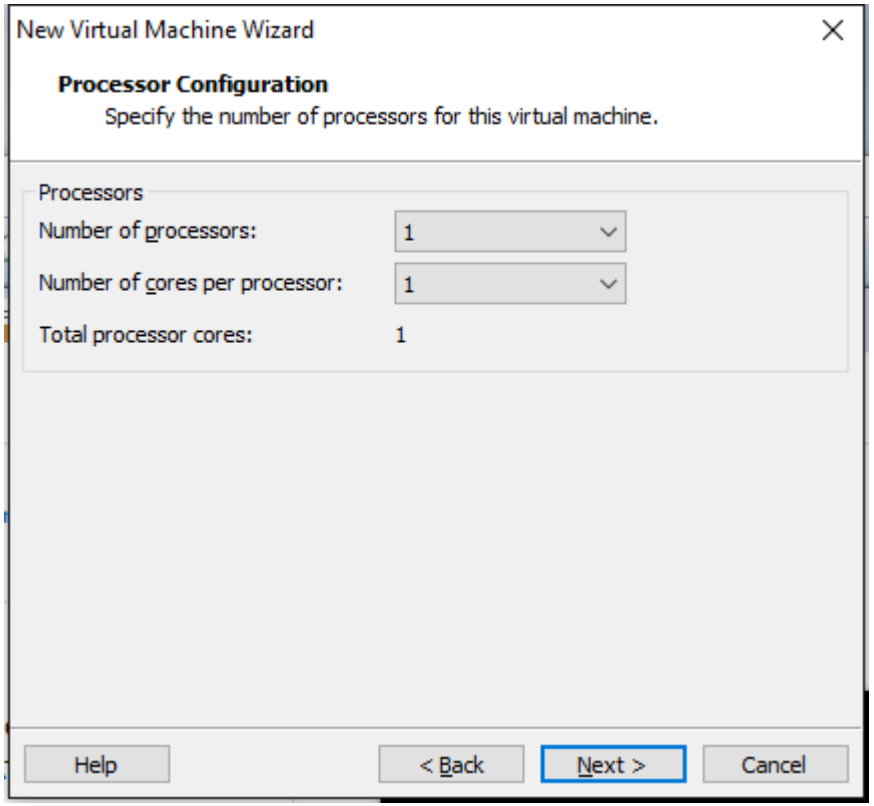
Want to be able to use it on ESXi 6.0 server too

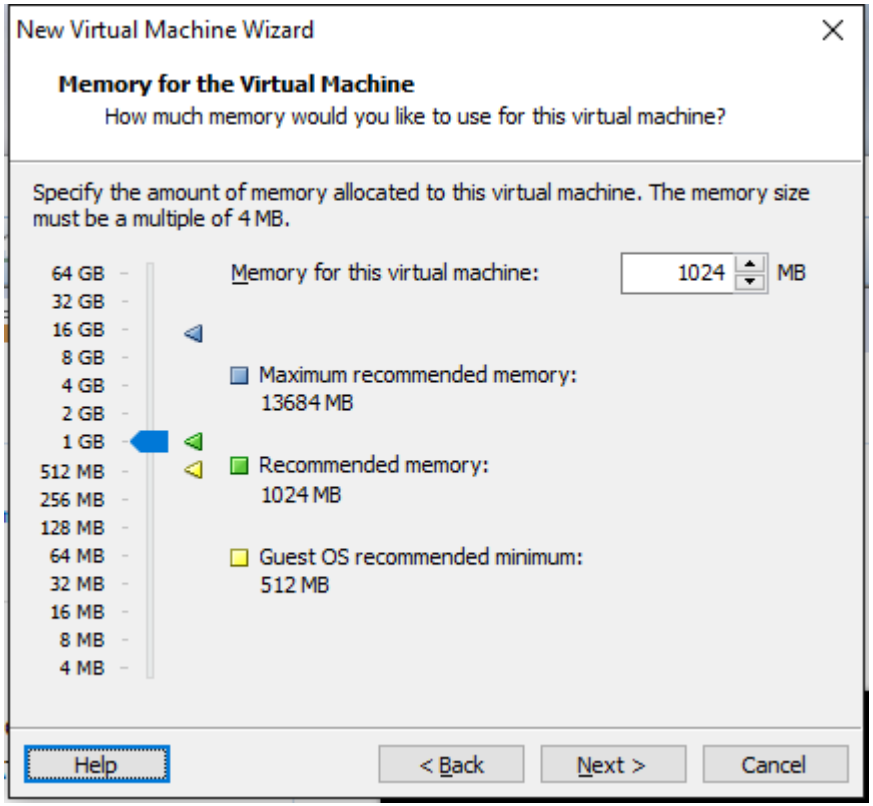




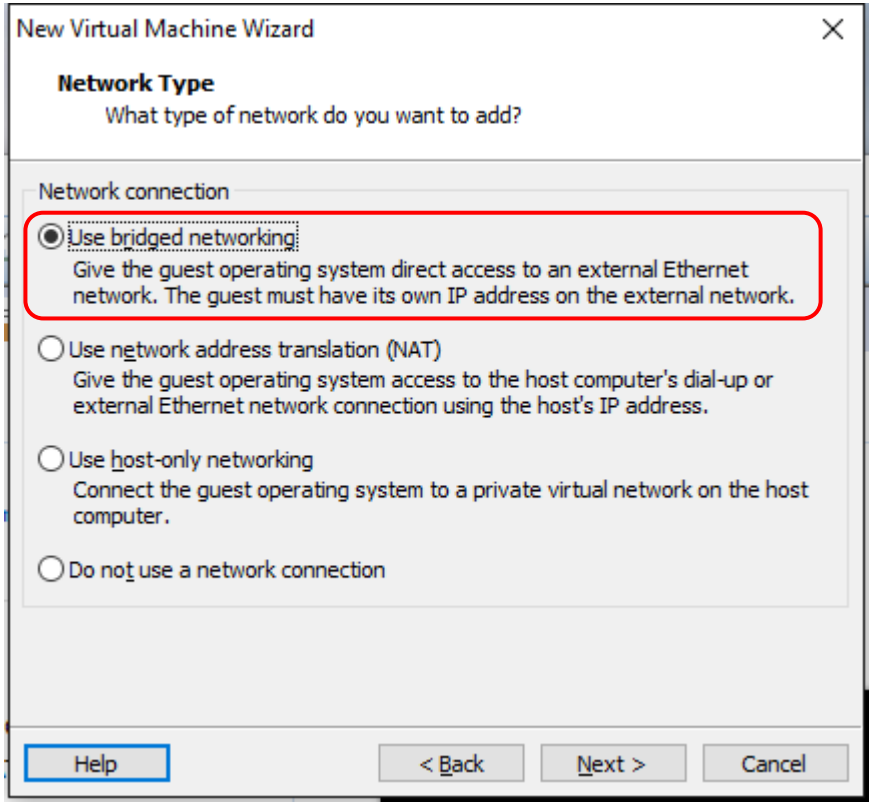
Browse to downloaded ISO file

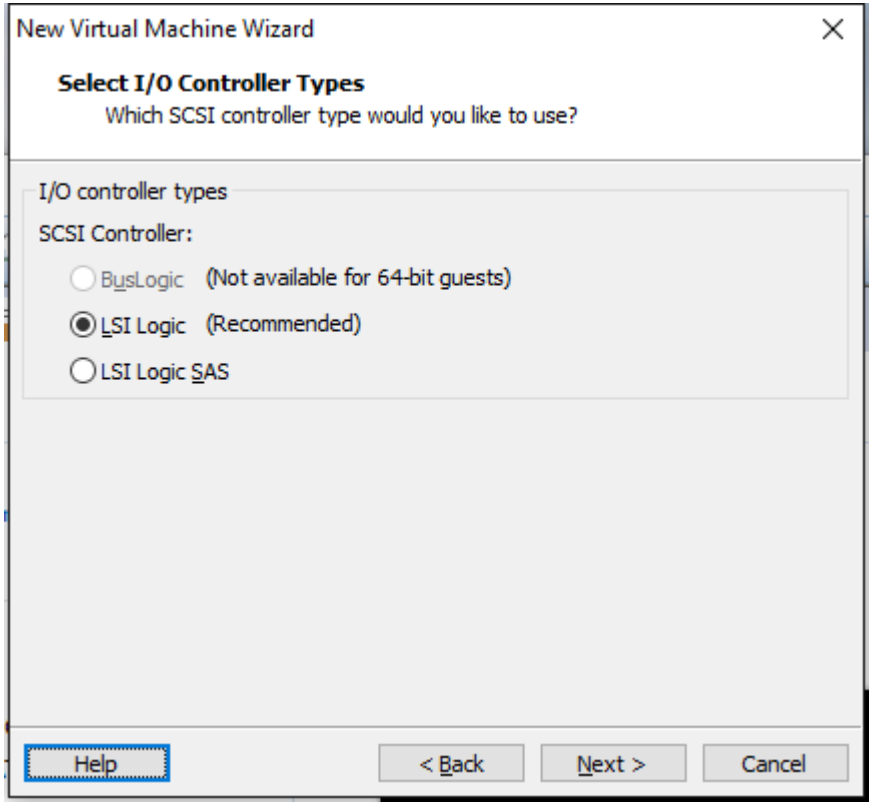
Name the new VM





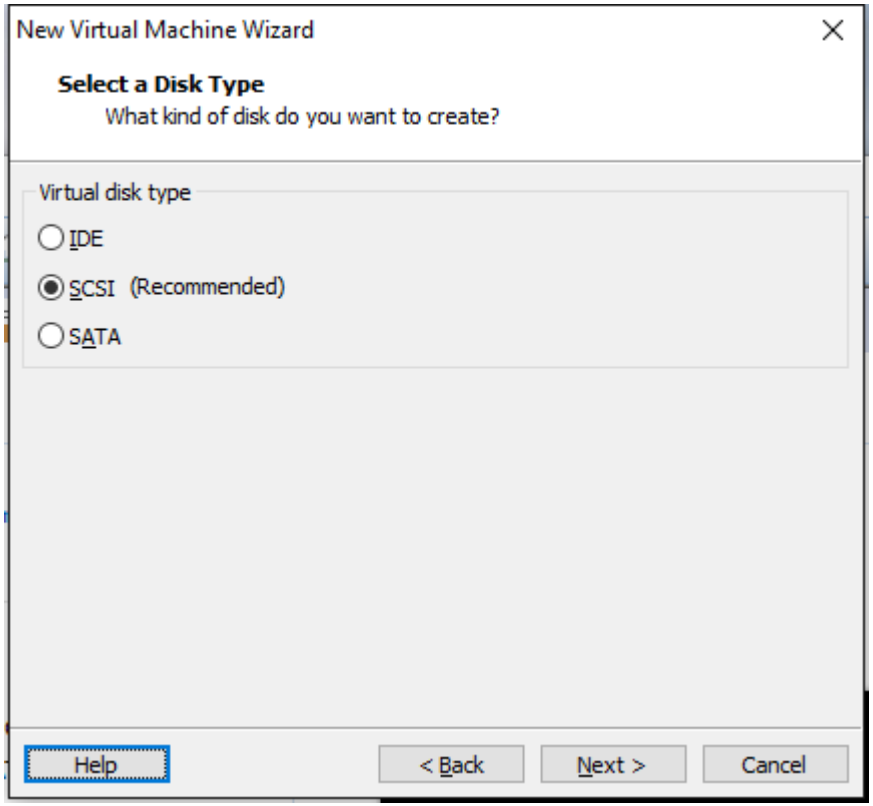
Take defaults: 1 CPU and 1GB RAM

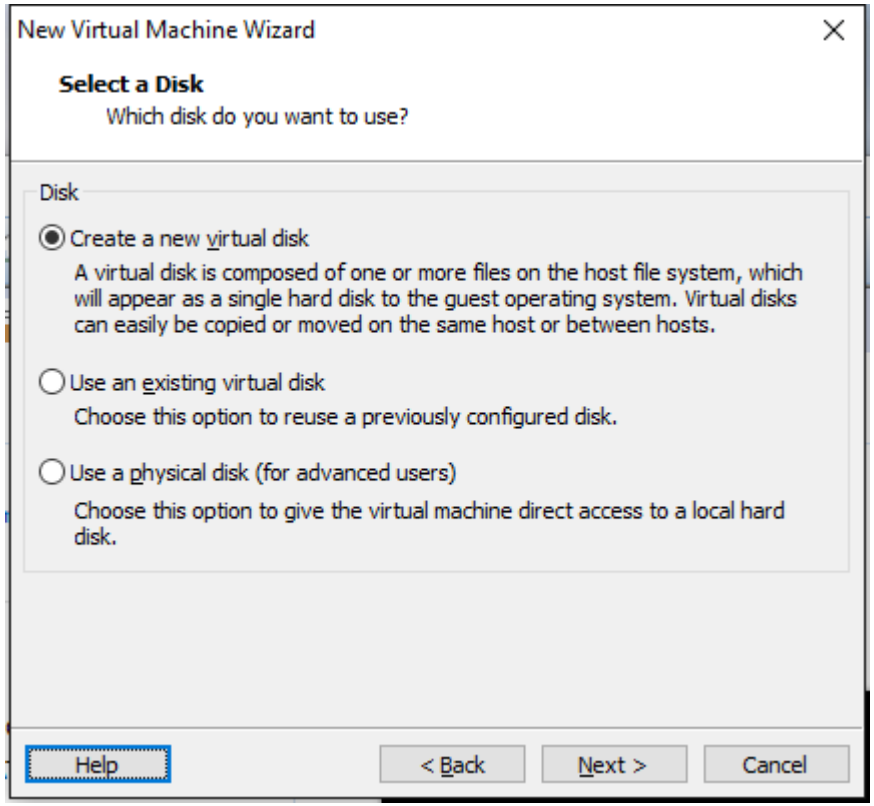




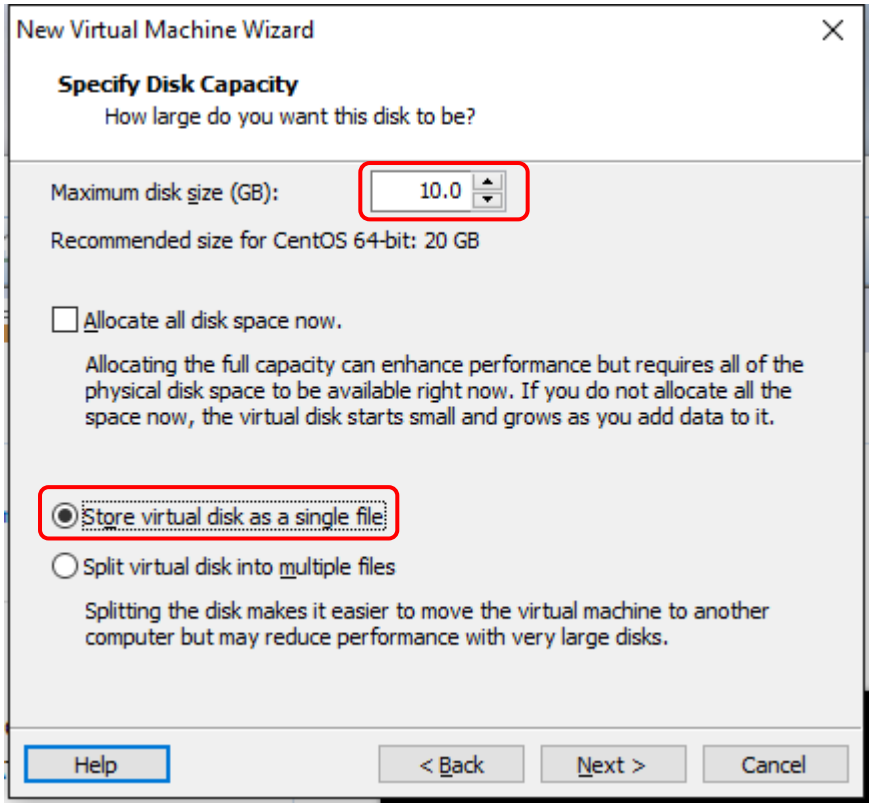
Let's used bridged so we can ssh into our new VM from the host computer

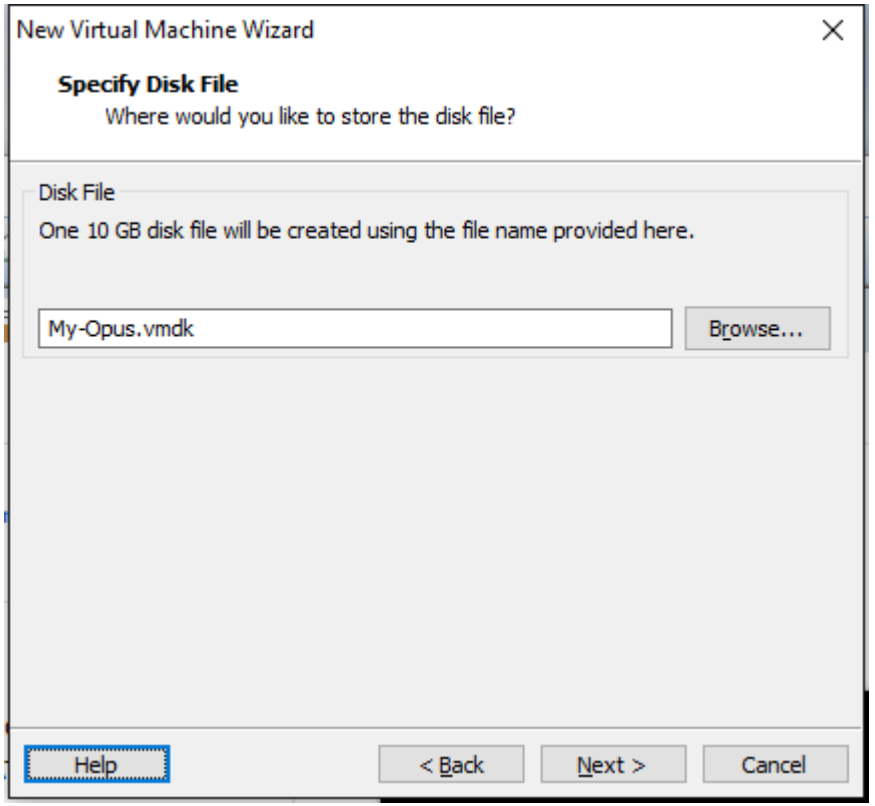
Take default





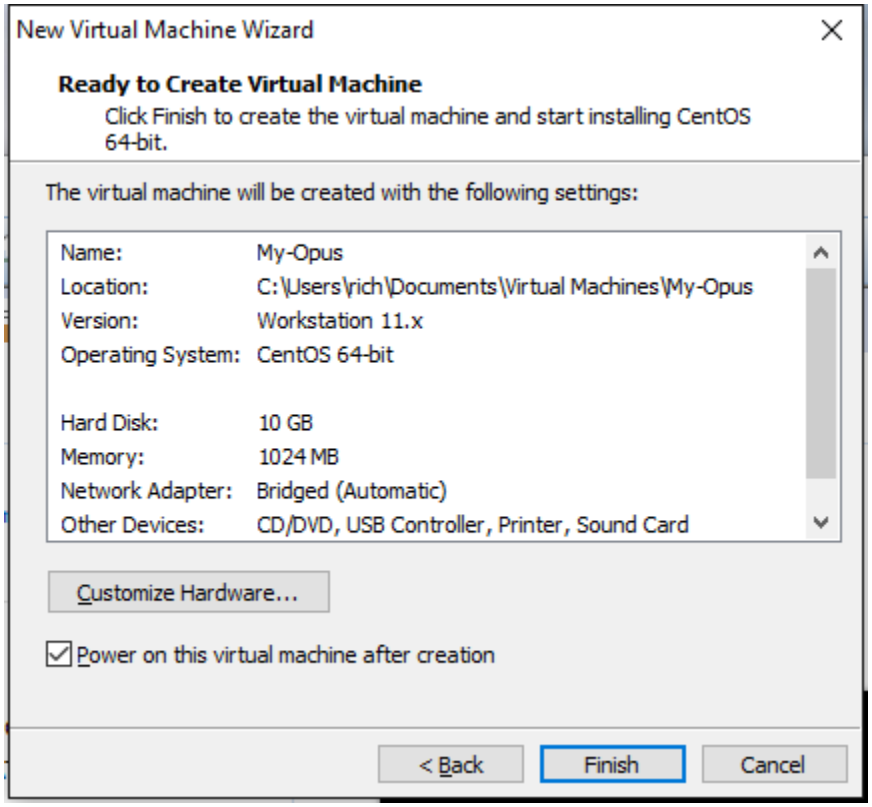
Take defaults



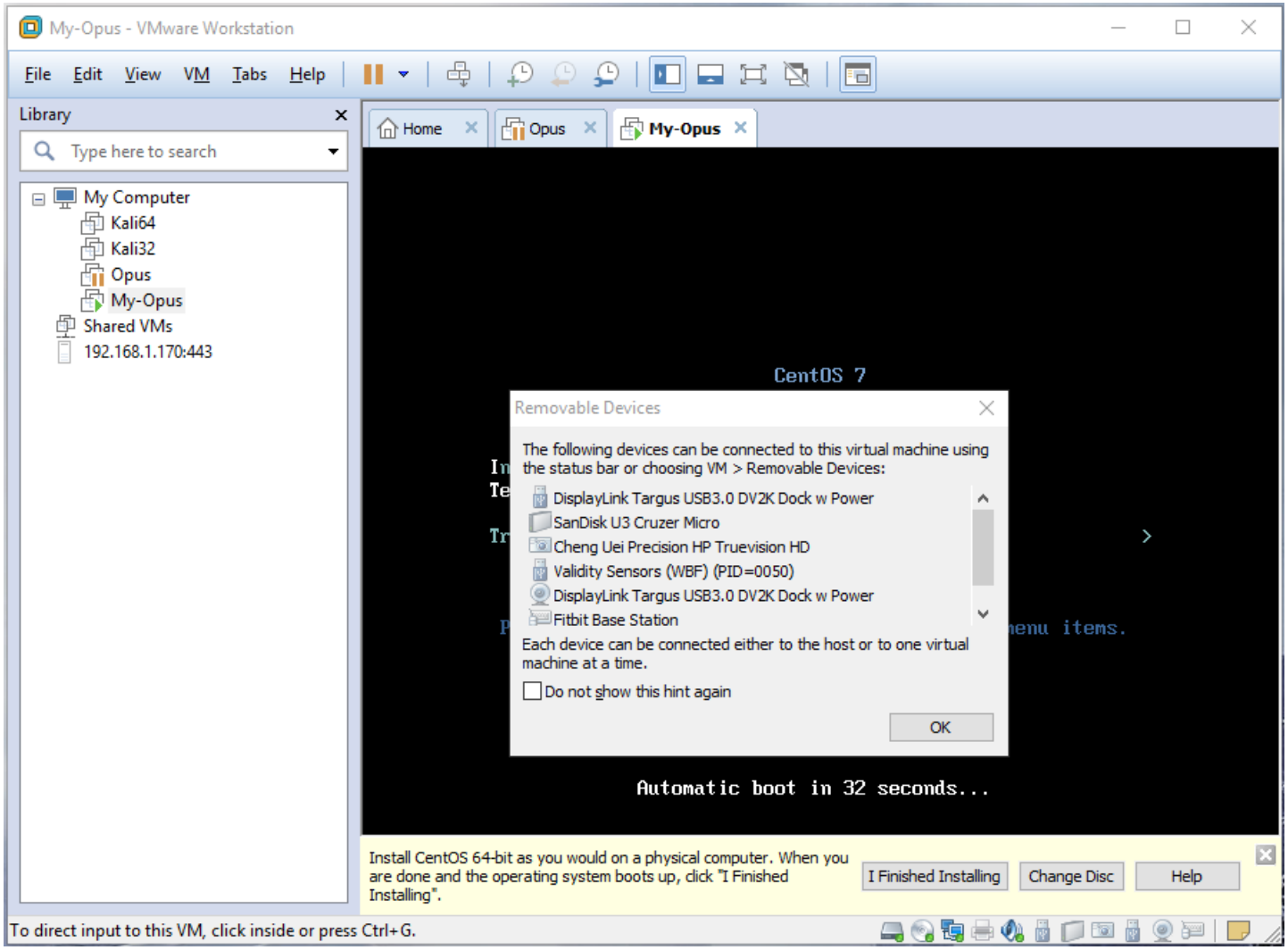


Select hard drive size and store a single file

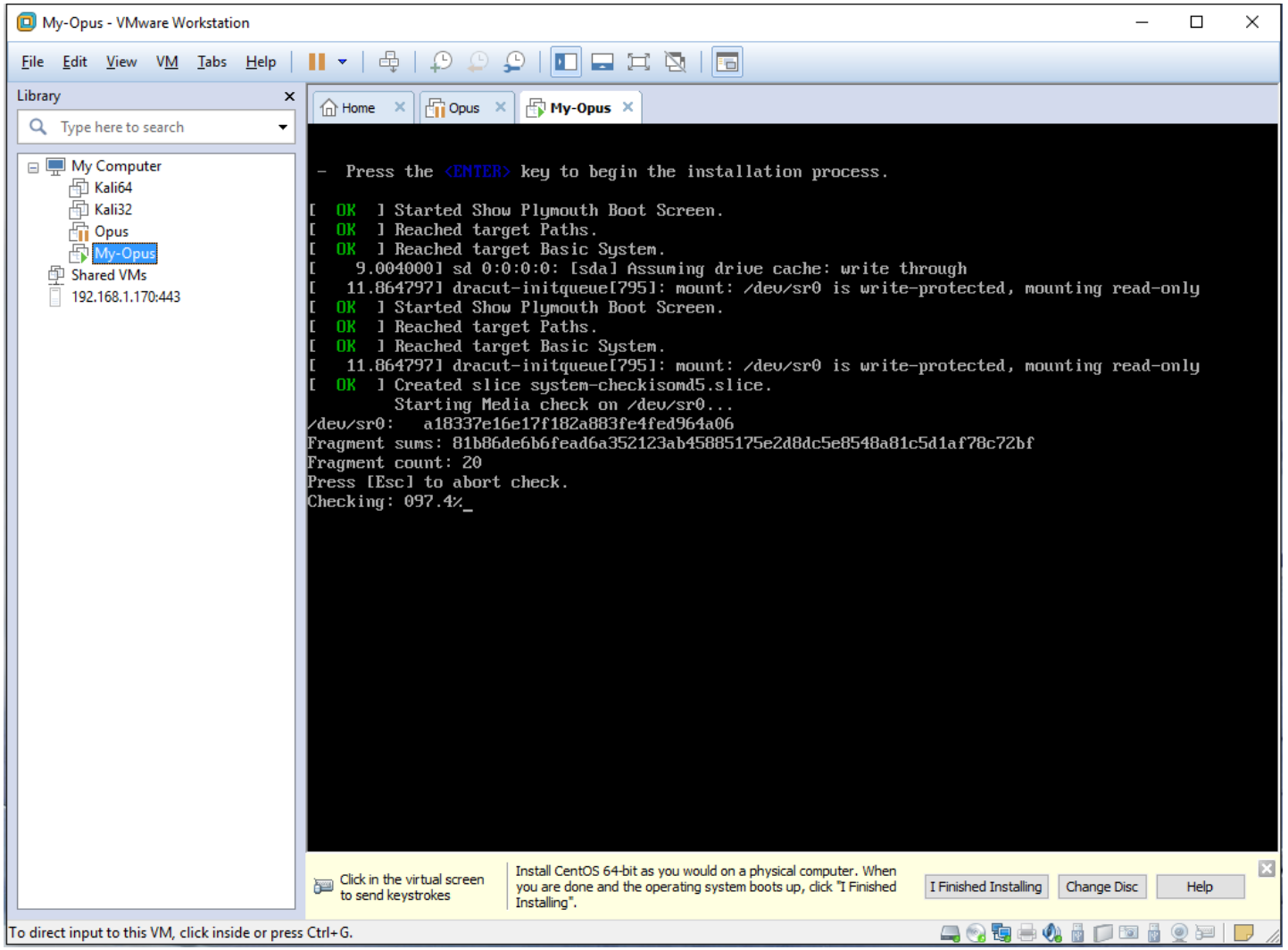
Take default


New Virtual Machine Wizard
Ready to Create Virtual Machine
Click Finish to create the virtual machine and start installing CentOS 64-bit.
The virtual machine will be created with the following settings:
Name: My-Opus
Location: C:\Users\rich\Documents\Virtual Machines\My-Opus
Version: Workstation 11.x
Operating System: CentOS 64-bit
Hard Disk: 10 GB
Memory: 1024 MB
Network Adapter: Bridged (Automatic)
Other Devices: CD/DVD, USB Controller, Printer, Sound Card
Customize Hardware...
Power on this virtual machine after creation
< Back
Finish
Cancel

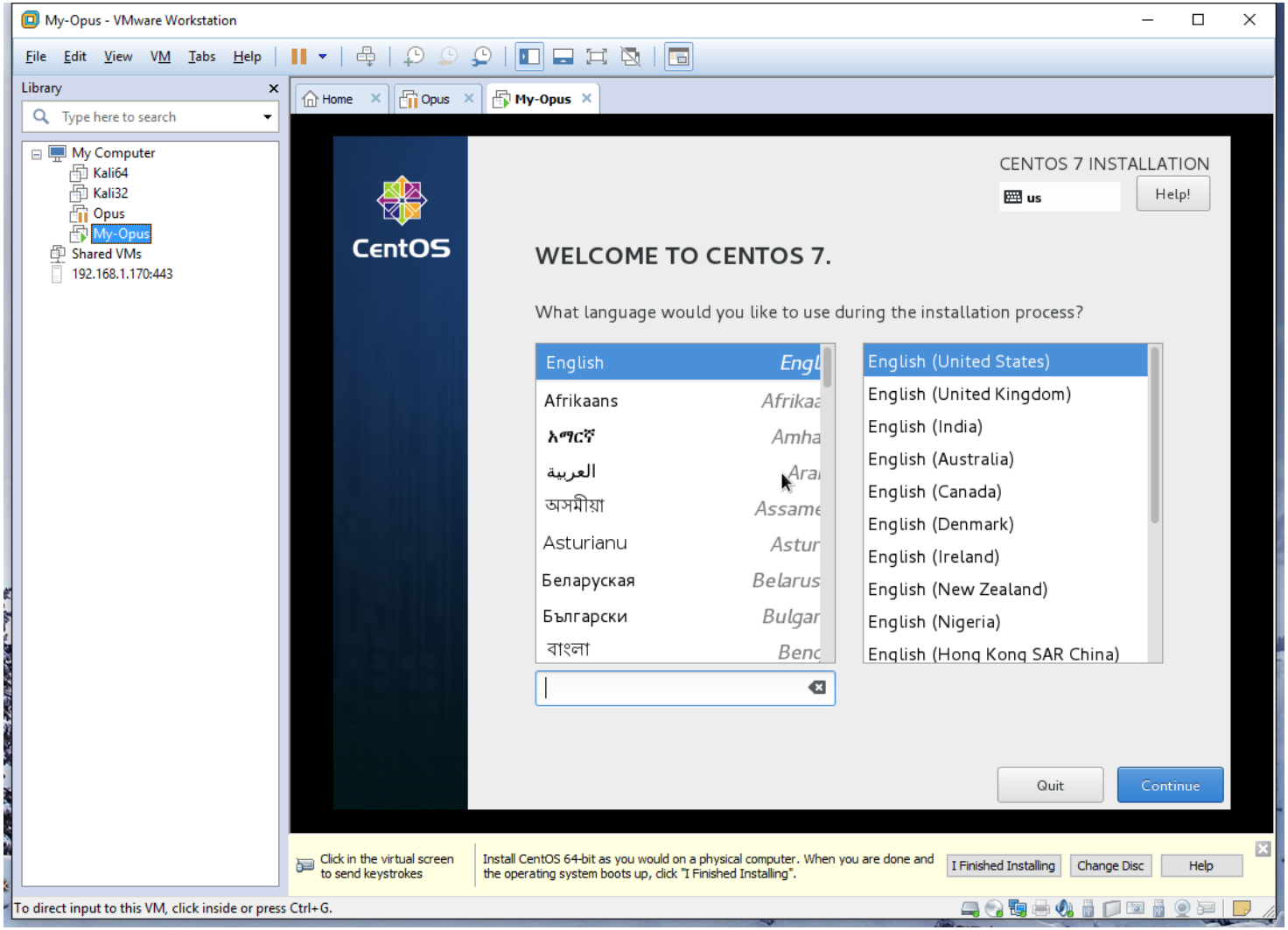
Go for it!



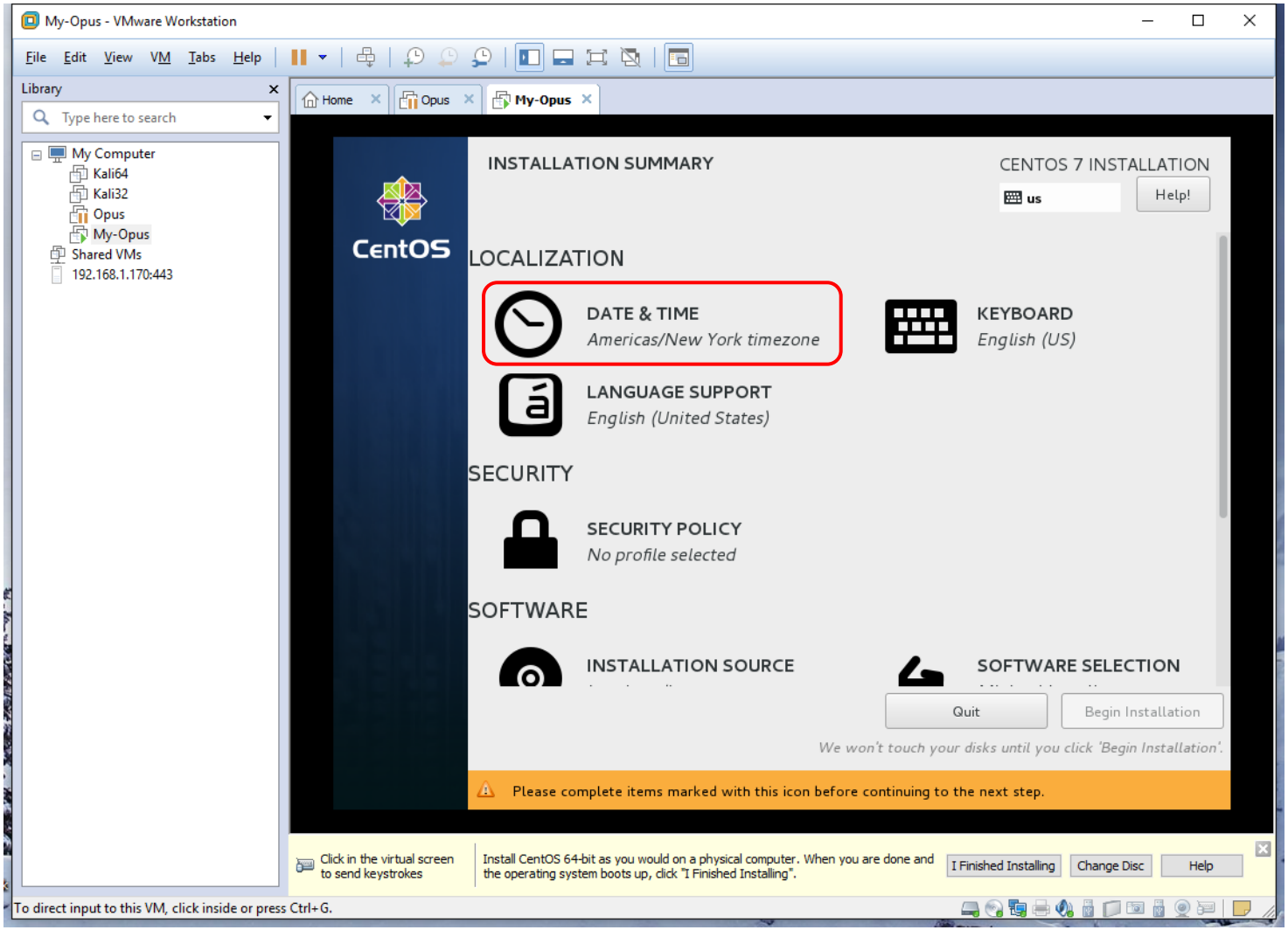
Read and click OK. Click inside VM, arrow up to "Install CentOS 7" and press Enter


My-Opus - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
Kali64
Kali32
Opus
My-Opus
Shared VMs
192.168.1.170:443
Home
Opus
My-Opus
- Press the <ENTER> key to begin the installation process.
[OK] Started Show Plymouth Boot Screen.
[OK] Reached target Paths.
[OK] Reached target Basic System.
[9.004000] sd 0:0:0:0: [sda] Assuming drive cache: write through
[11.864797] dracut-initqueue[795]: mount: /dev/sr0 is write-protected, mounting read-only
[OK] Started Show Plymouth Boot Screen.
[OK] Reached target Paths.
[OK] Reached target Basic System.
[11.864797] dracut-initqueue[795]: mount: /dev/sr0 is write-protected, mounting read-only
[OK] Created slice system-checkisomd5.slice.
Starting Media check on /dev/sr0...
/dev/sr0: a18337e16e17f182a883fe4fed964a06
Fragment sums: 81b86de6b6fead6a352123ab45885175e2d8dc5e8548a81c5d1af78c72bf
Fragment count: 20
Press [Esc] to abort check.
Checking: 097.4%
Click in the virtual screen to send keystrokes
Install CentOS 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".
I Finished Installing
Change Disc
Help
To direct input to this VM, click inside or press Ctrl+G.

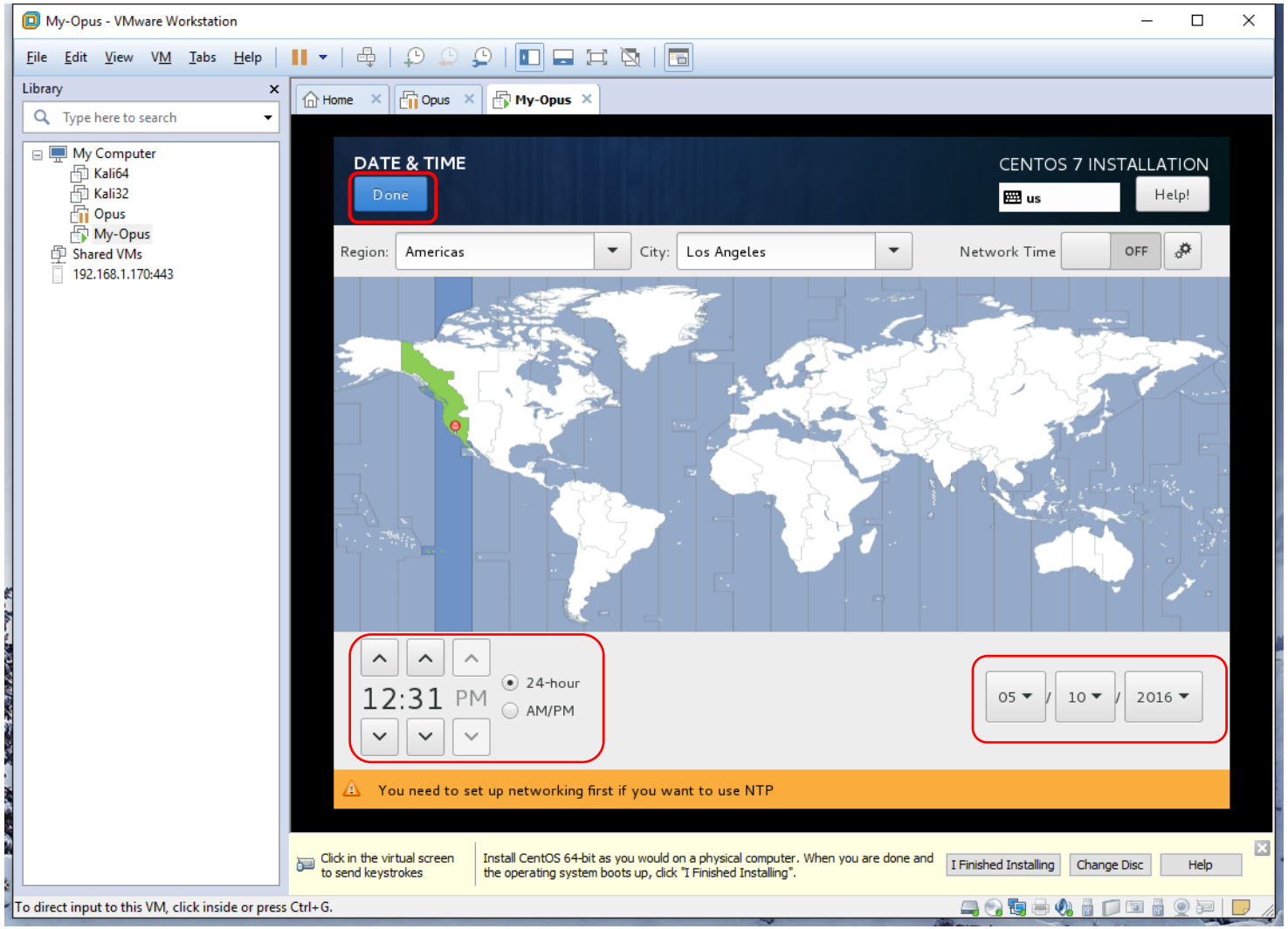
Away it goes …



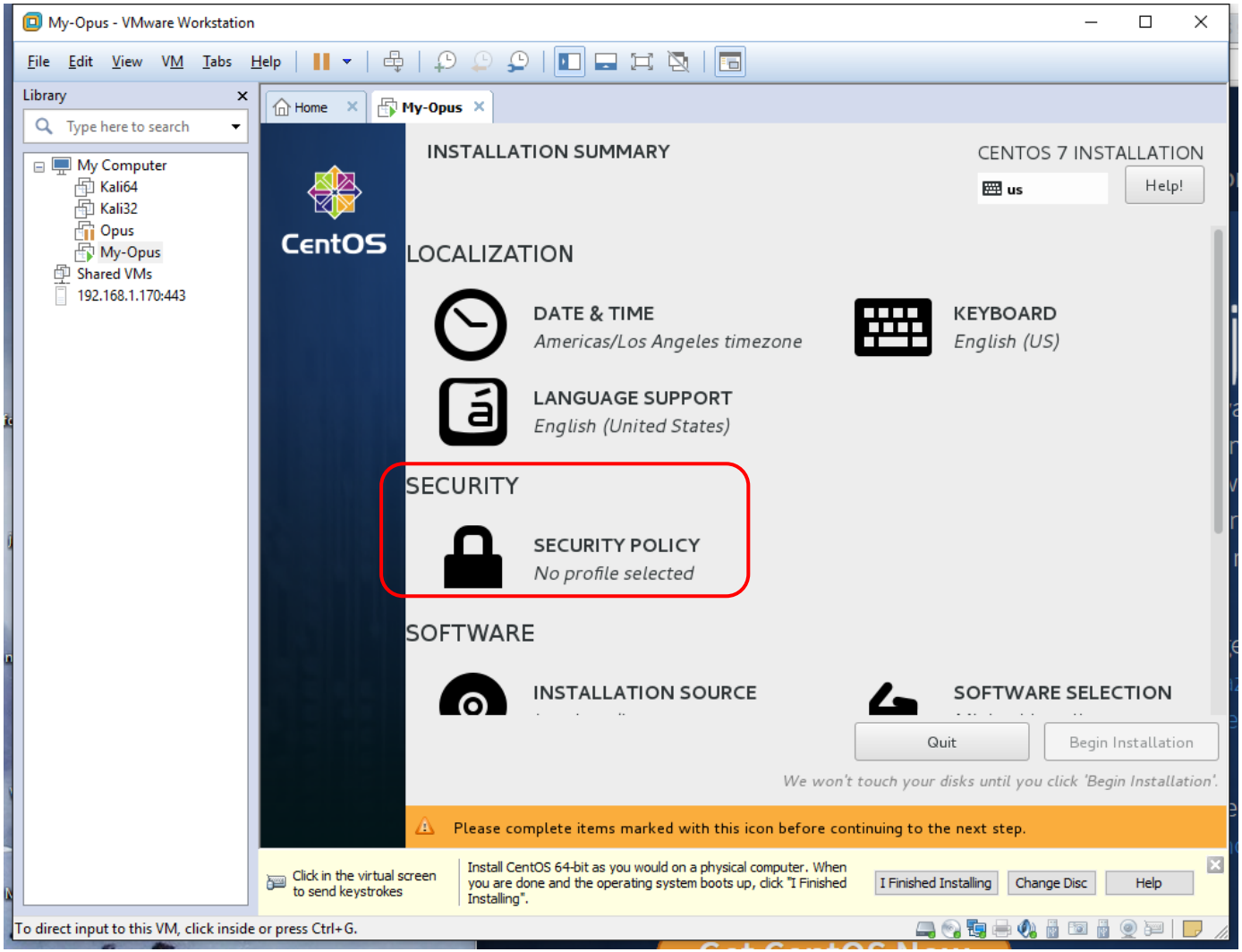
Take defaults



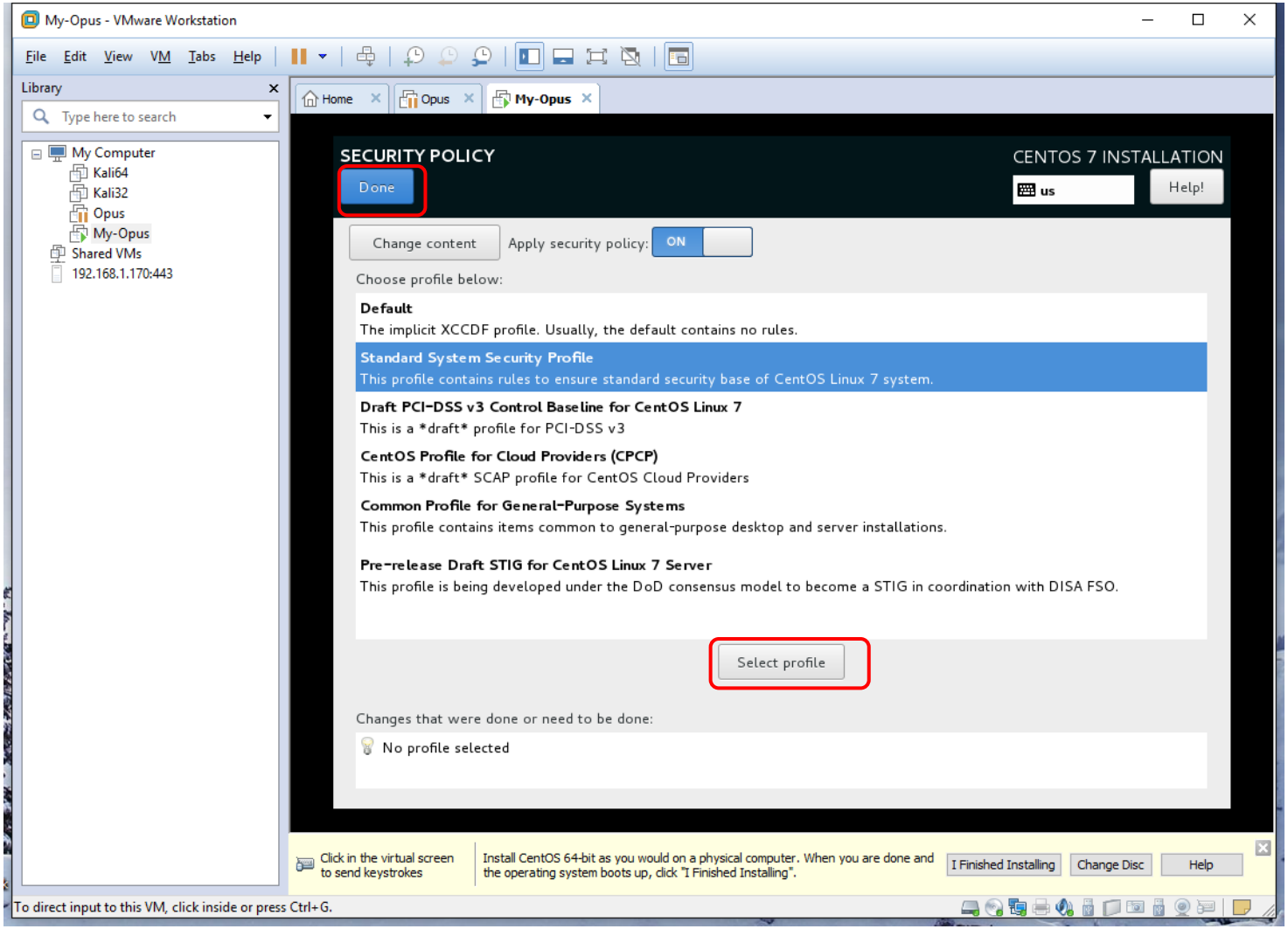
Update time zone



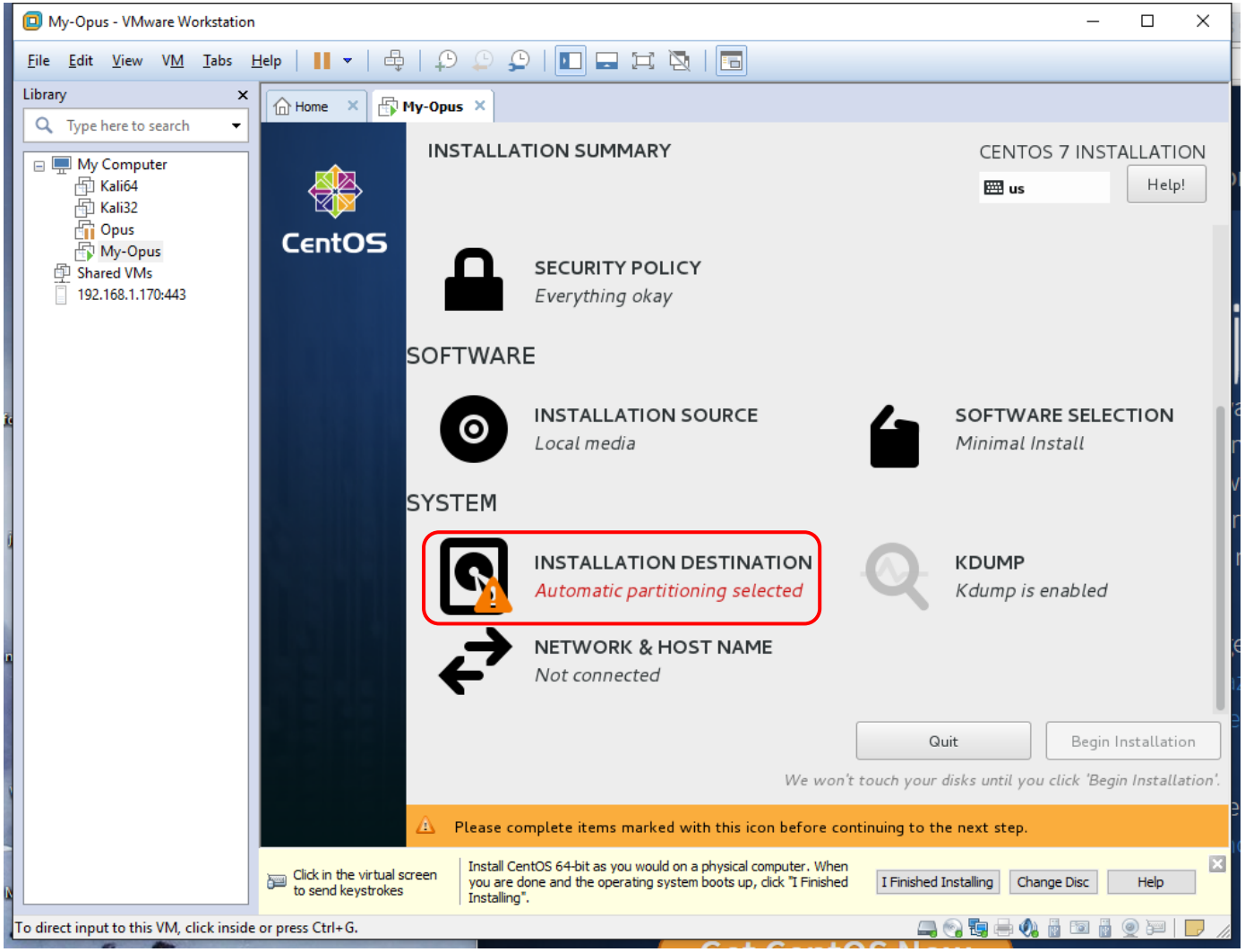
Click your zone, set the correct time and date then click done



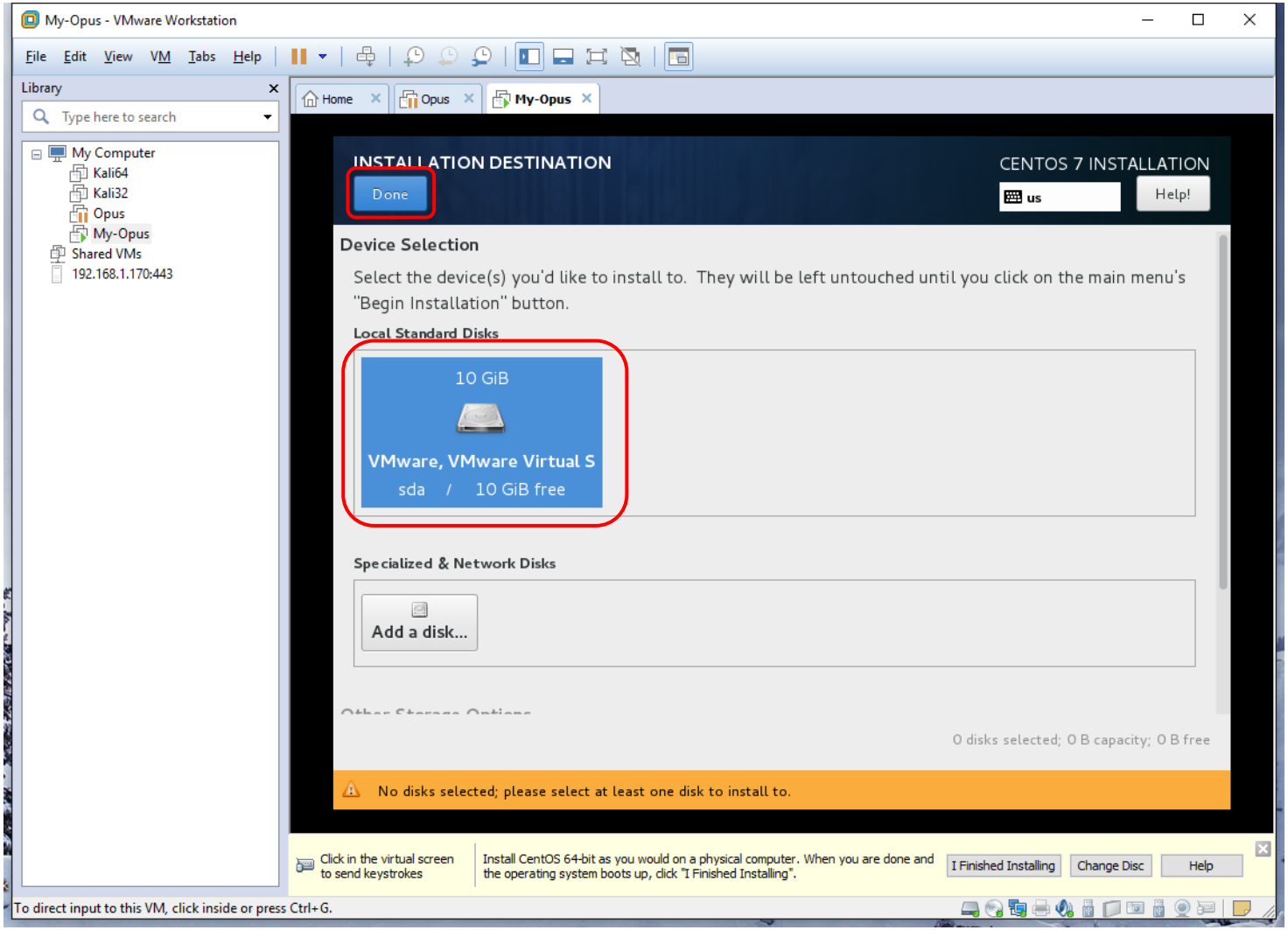
Update security policy



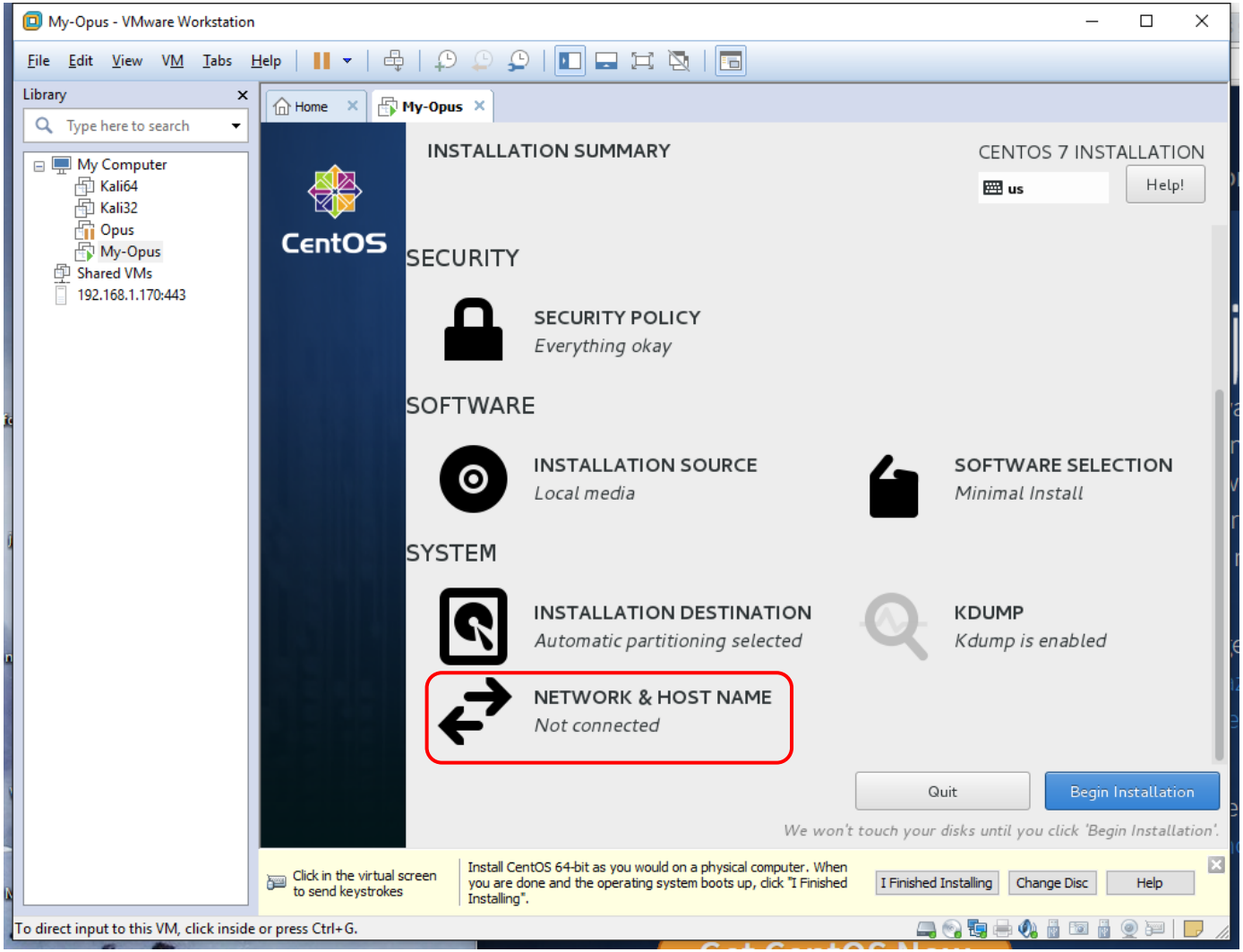
Select standard, click Select profile and click Done



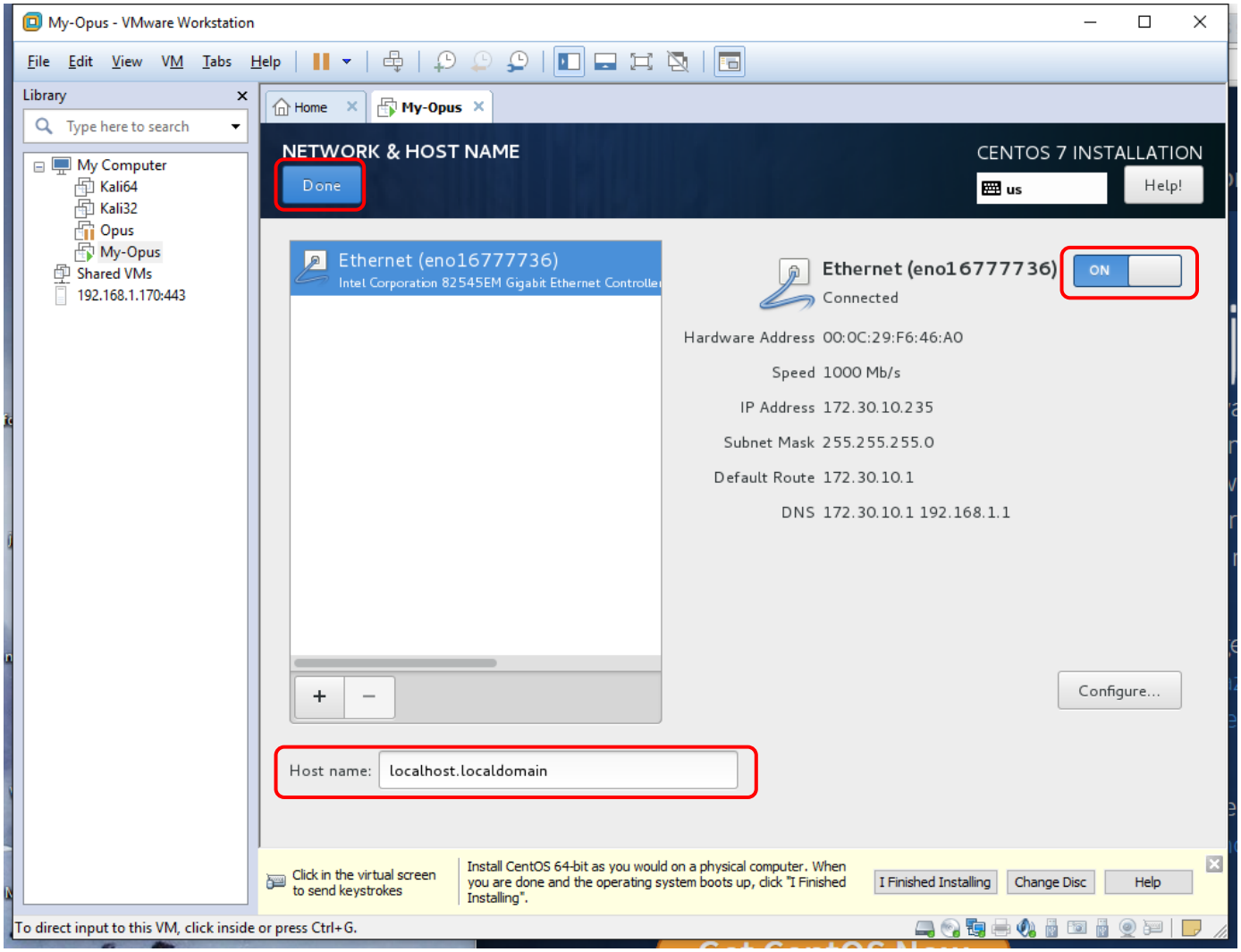
Select where to install



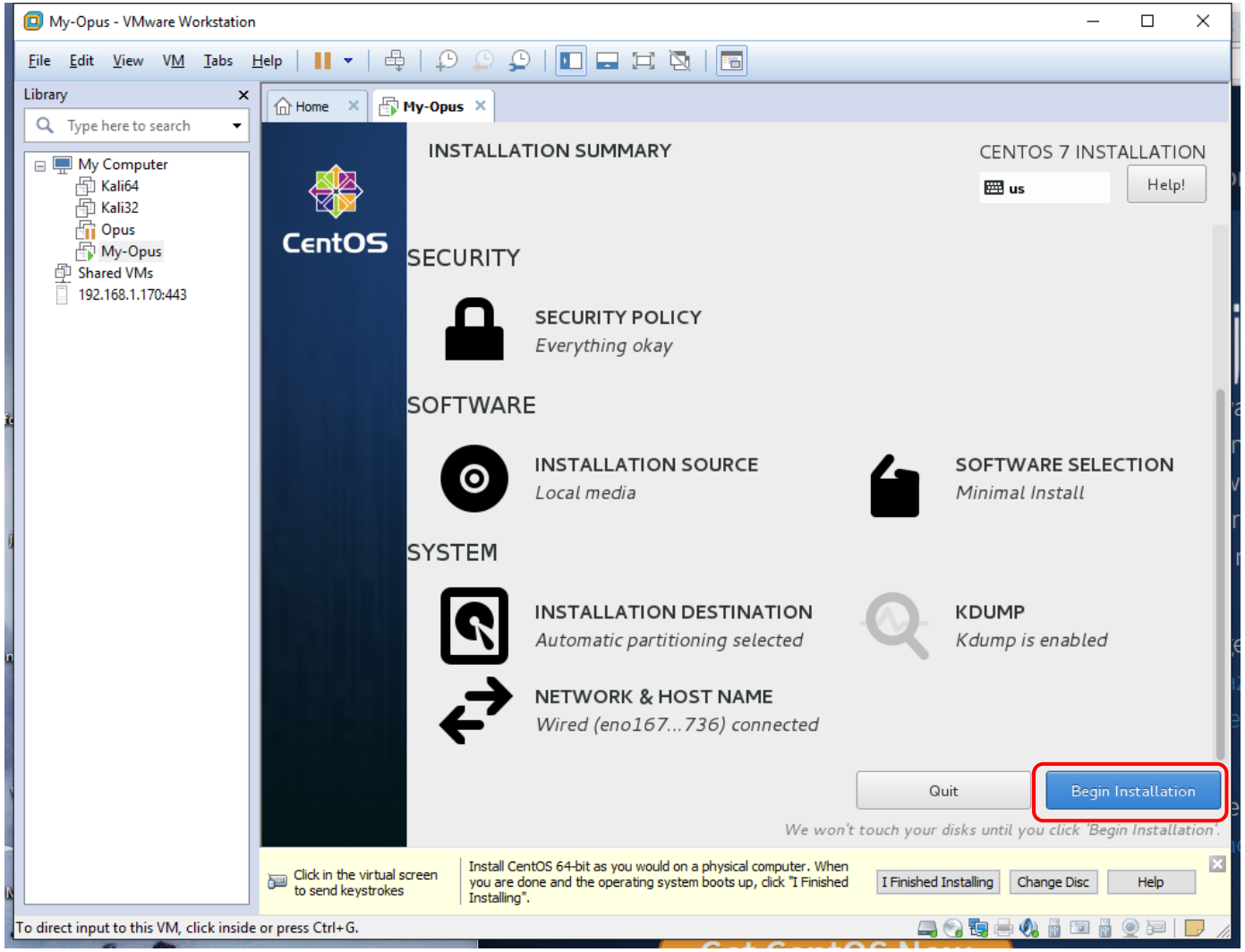
Select new drive and click Done



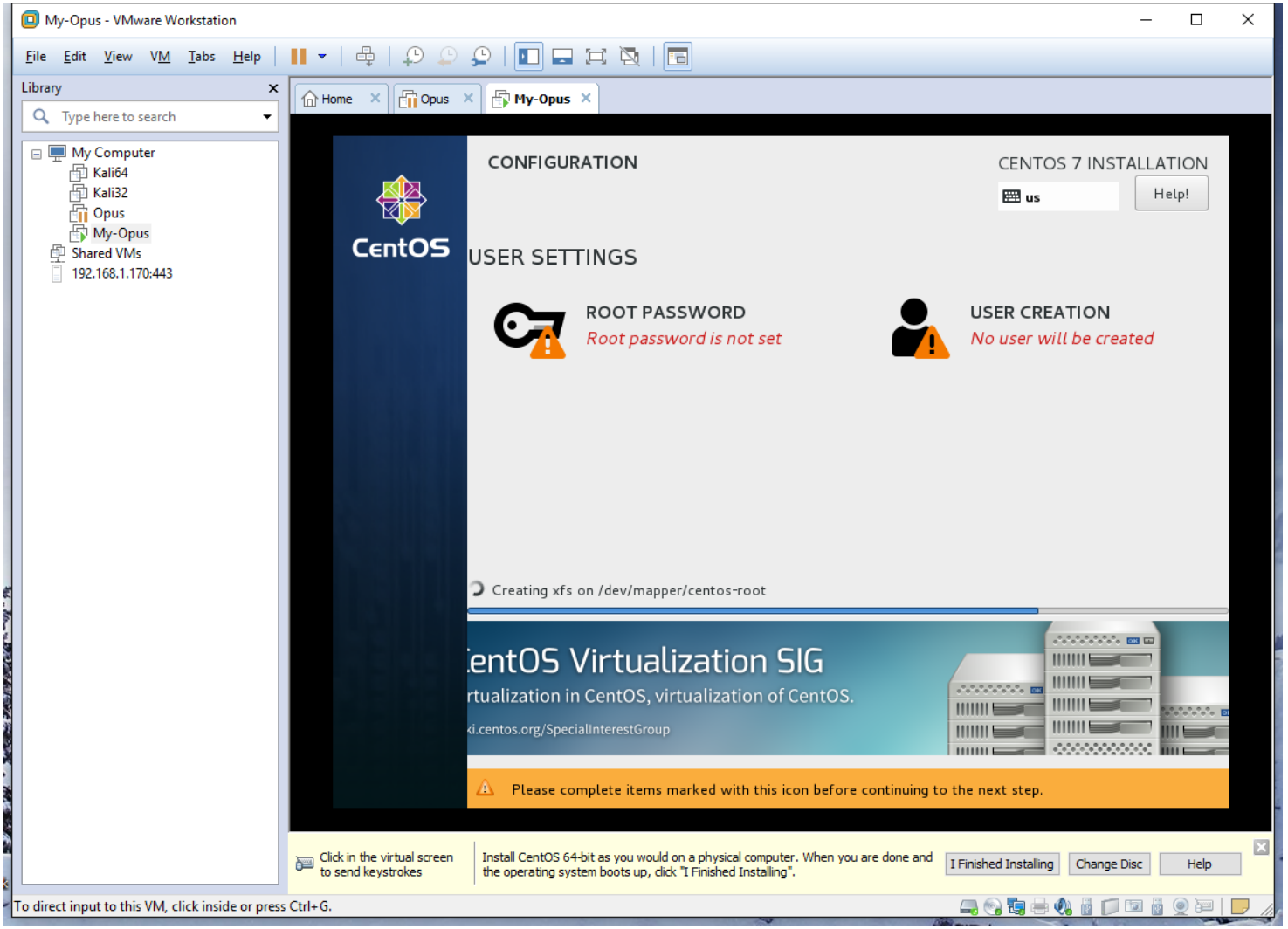
Configure network



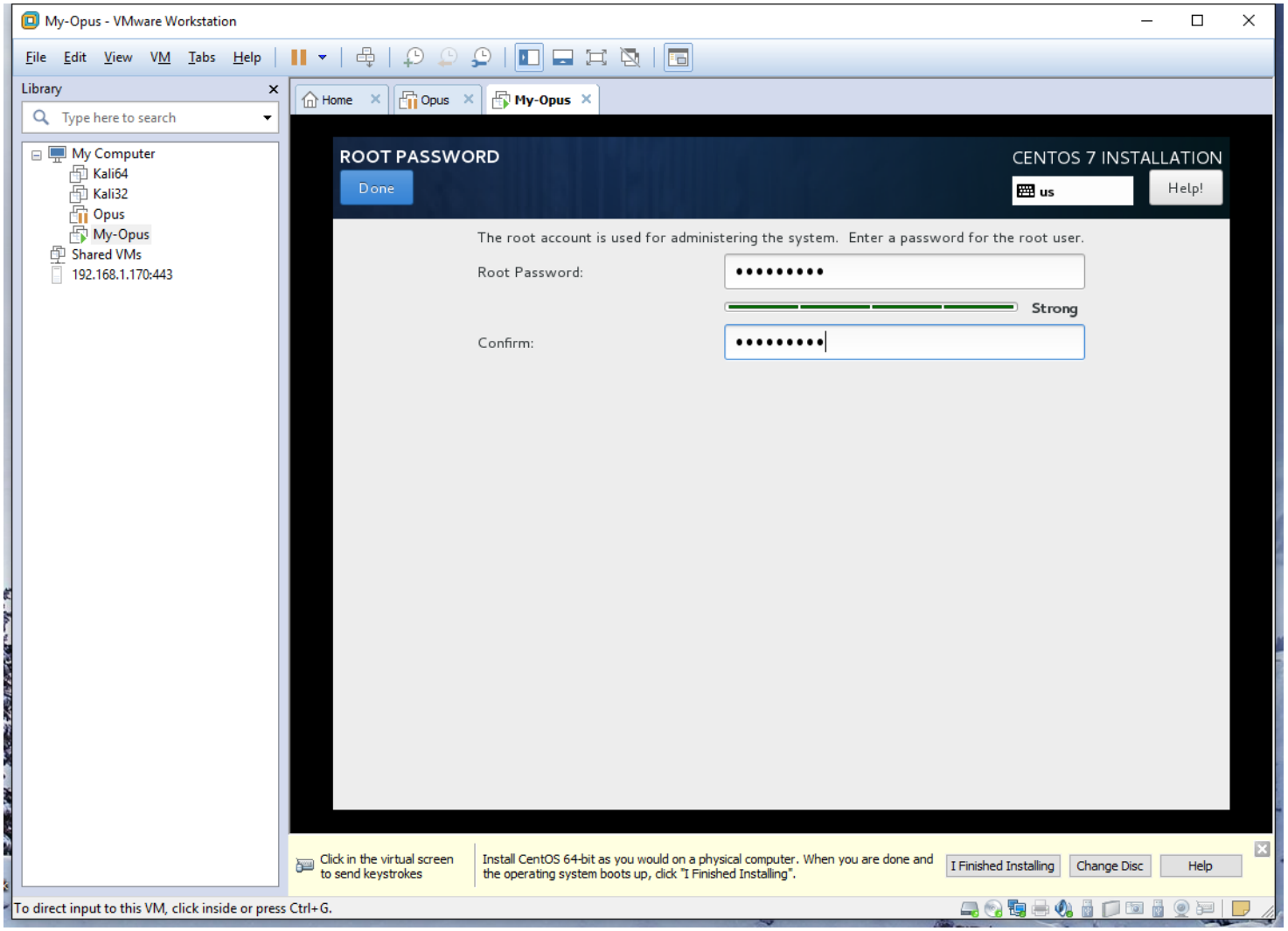
Configure interface to "ON", optionally name system then click Done


My-Opus - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
Kali64
Kali32
Opus
My-Opus
Shared VMs
192.168.1.170:443
Home
My-Opus
CentOS
INSTALLATION SUMMARY
CENTOS 7 INSTALLATION
us
Help!
SECURITY
SECURITY POLICY
Everything okay
SOFTWARE
INSTALLATION SOURCE
Local media
SOFTWARE SELECTION
Minimal Install
SYSTEM
INSTALLATION DESTINATION
Automatic partitioning selected
KDUMP
Kdump is enabled
NETWORK & HOST NAME
Wired (eno167...736) connected
Quit
Begin Installation
We won't touch your disks until you click 'Begin Installation'.
Click in the virtual screen to send keystrokes
Install CentOS 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".
I Finished Installing
Change Disc
Help
To direct input to this VM, click inside or press Ctrl+G.

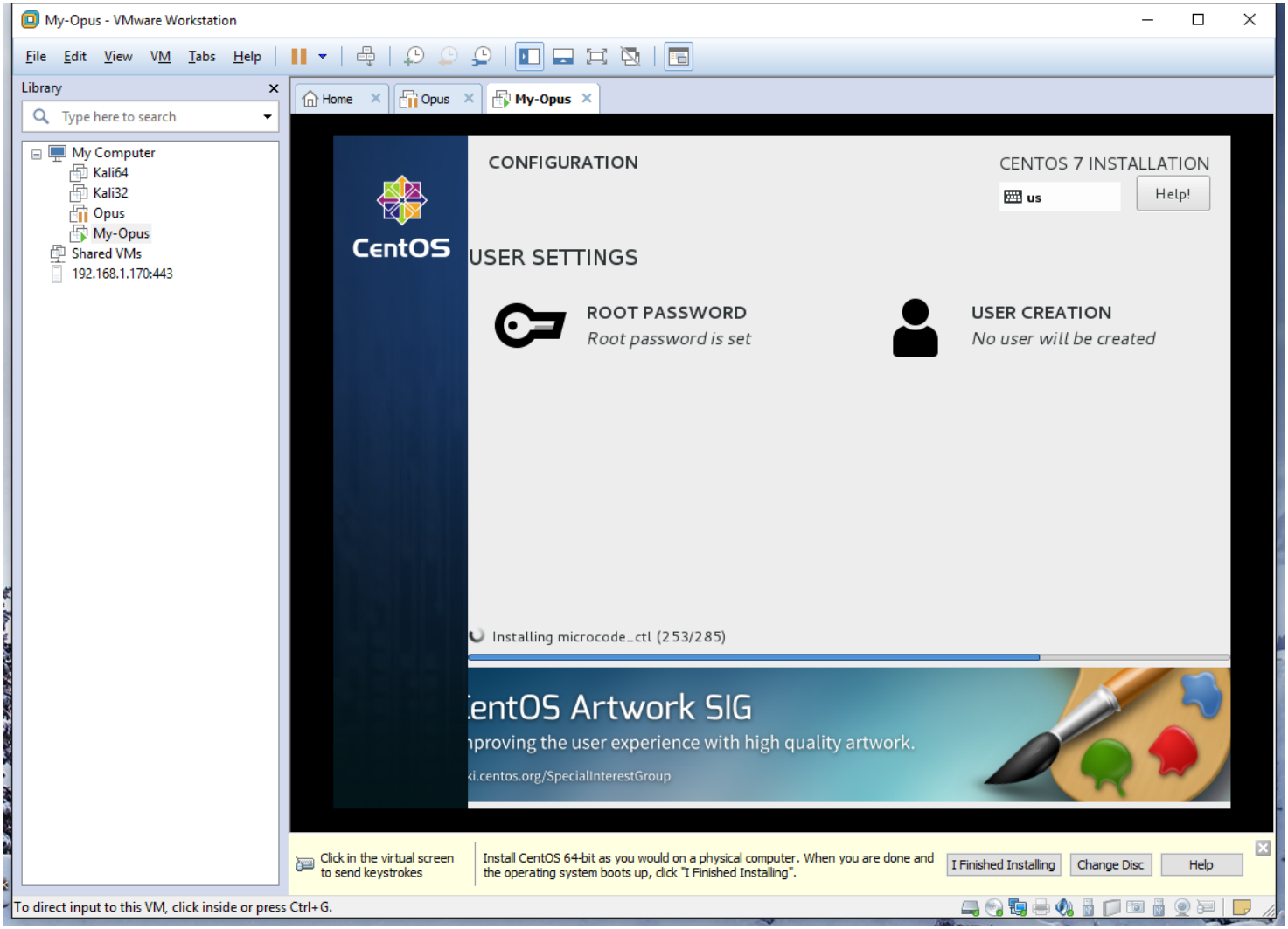
Go for it!



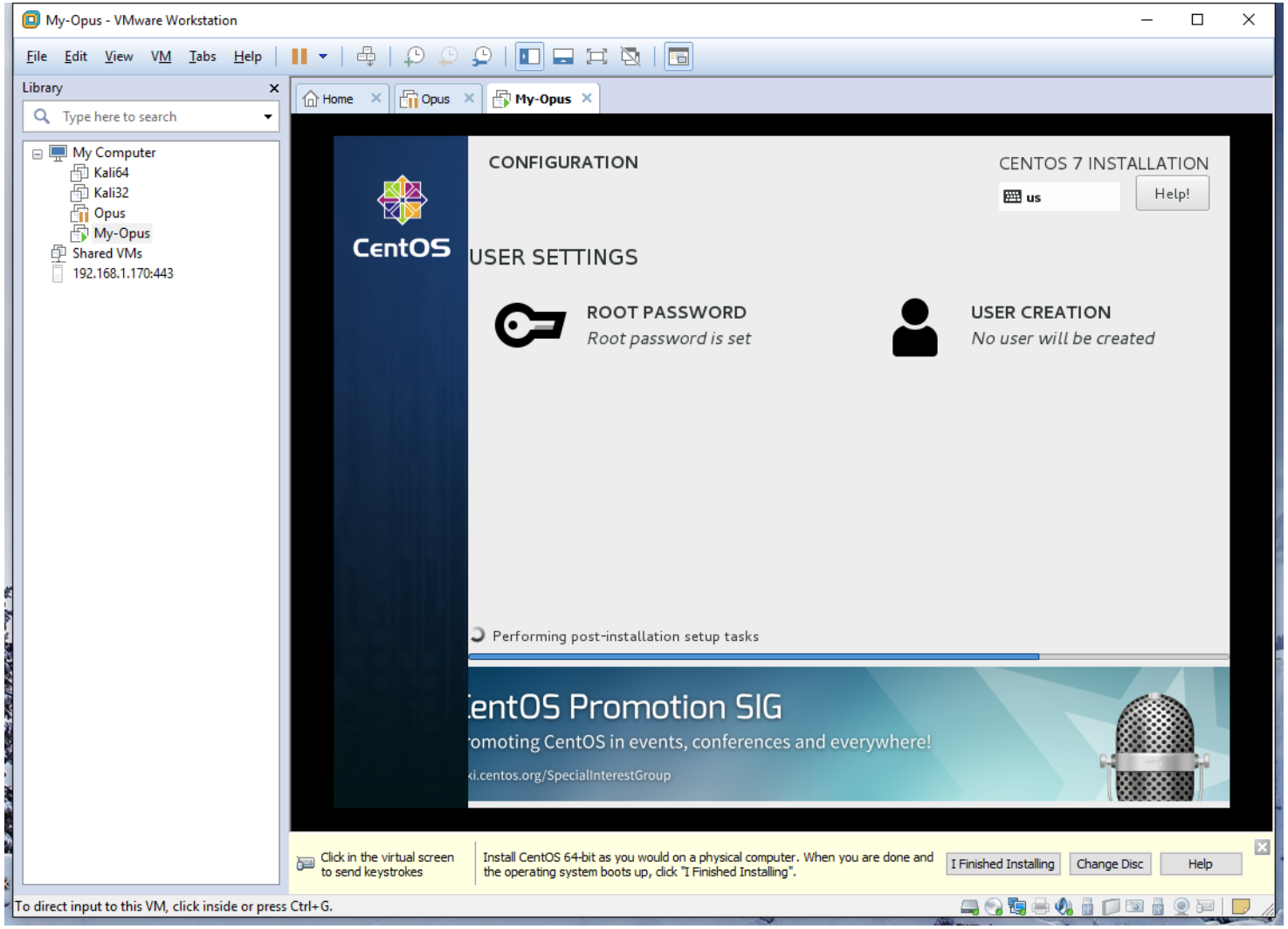
While we are waiting set password for root user



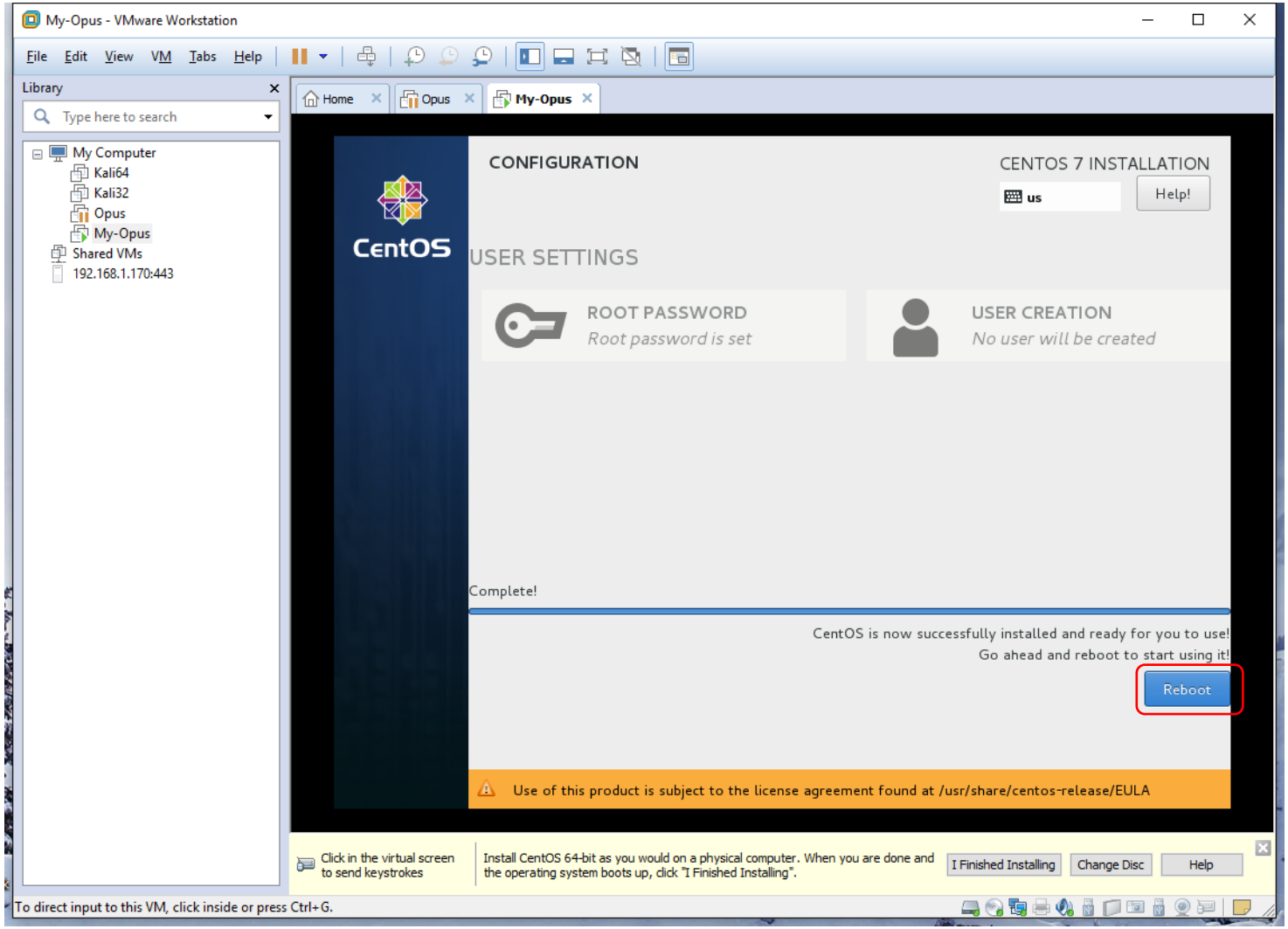
Make it a strong one


My-Opus - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
Kali64
Kali32
Opus
My-Opus
Shared VMs
192.168.1.170:443
Home
Opus
My-Opus
CONFIGURATION
CENTOS 7 INSTALLATION
us
Help!
CentOS
USER SETTINGS
ROOT PASSWORD
Root password is set
USER CREATION
No user will be created
Installing microcode_ctl (253/285)
entOS Artwork SIG
proving the user experience with high quality artwork.
i.centos.org/SpecialInterestGroup
Click in the virtual screen to send keystrokes
Install CentOS 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".
I Finished Installing
Change Disc
Help
To direct input to this VM, click inside or press Ctrl+G.

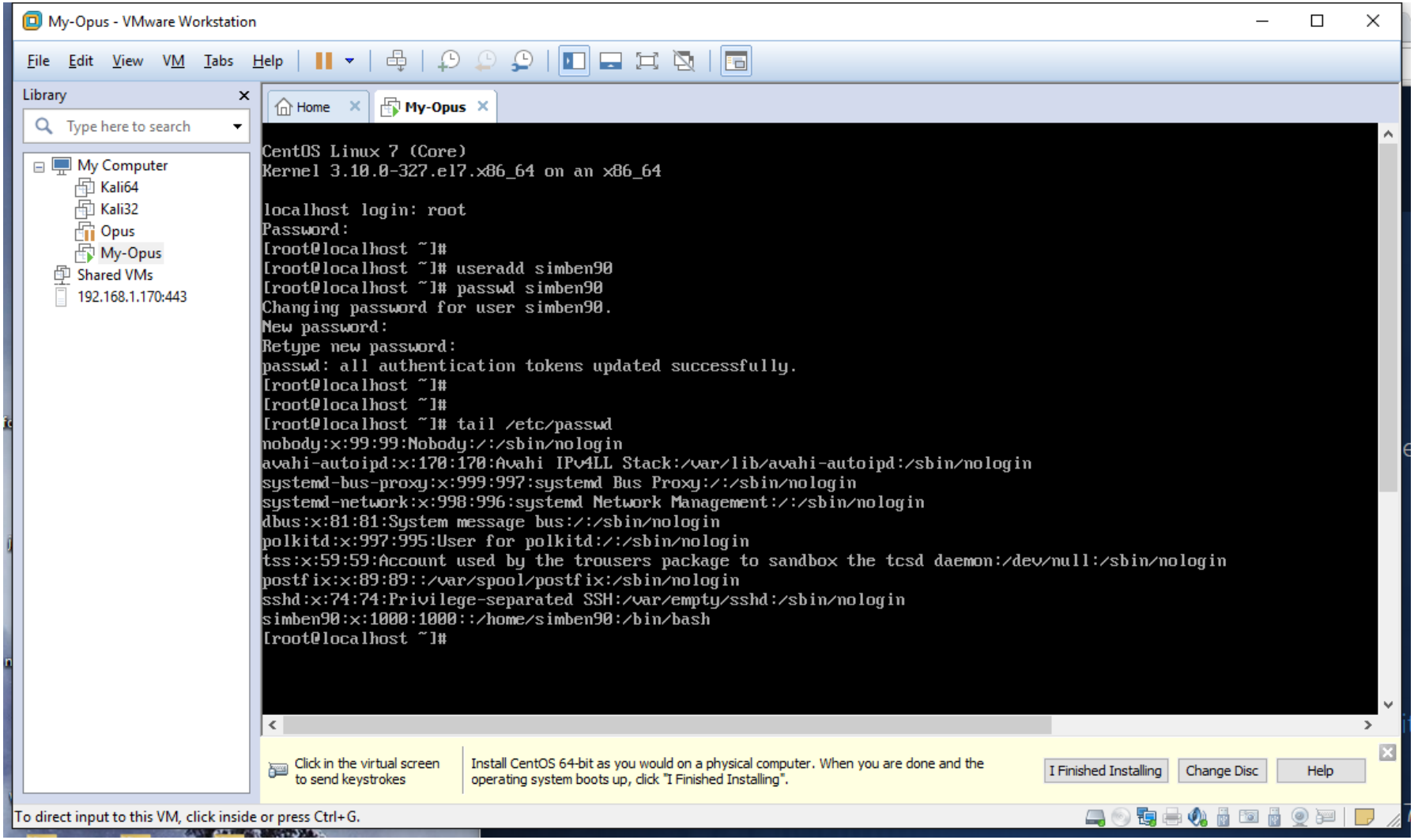
Wait …



Wait some more …

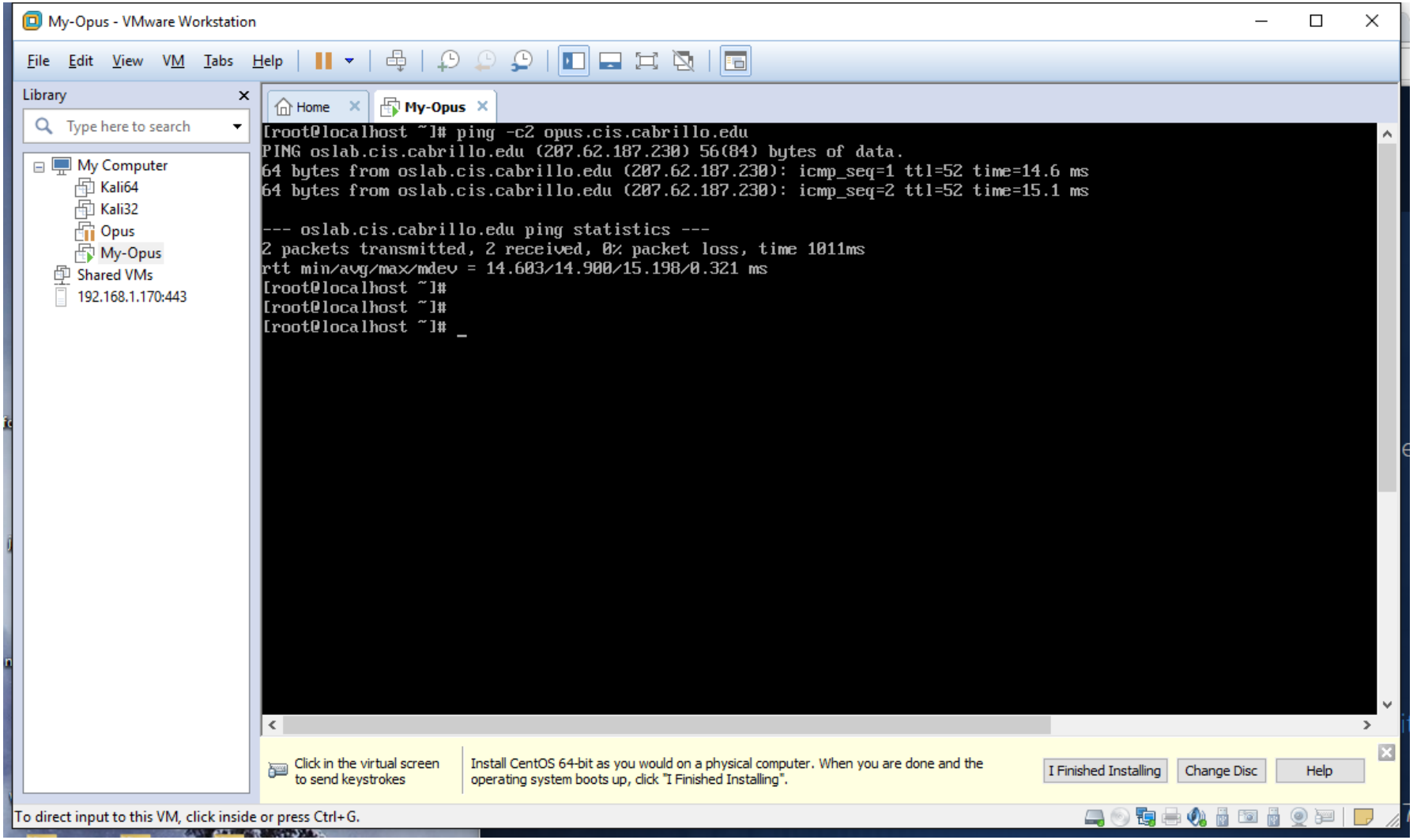


Click Reboot to start new VM

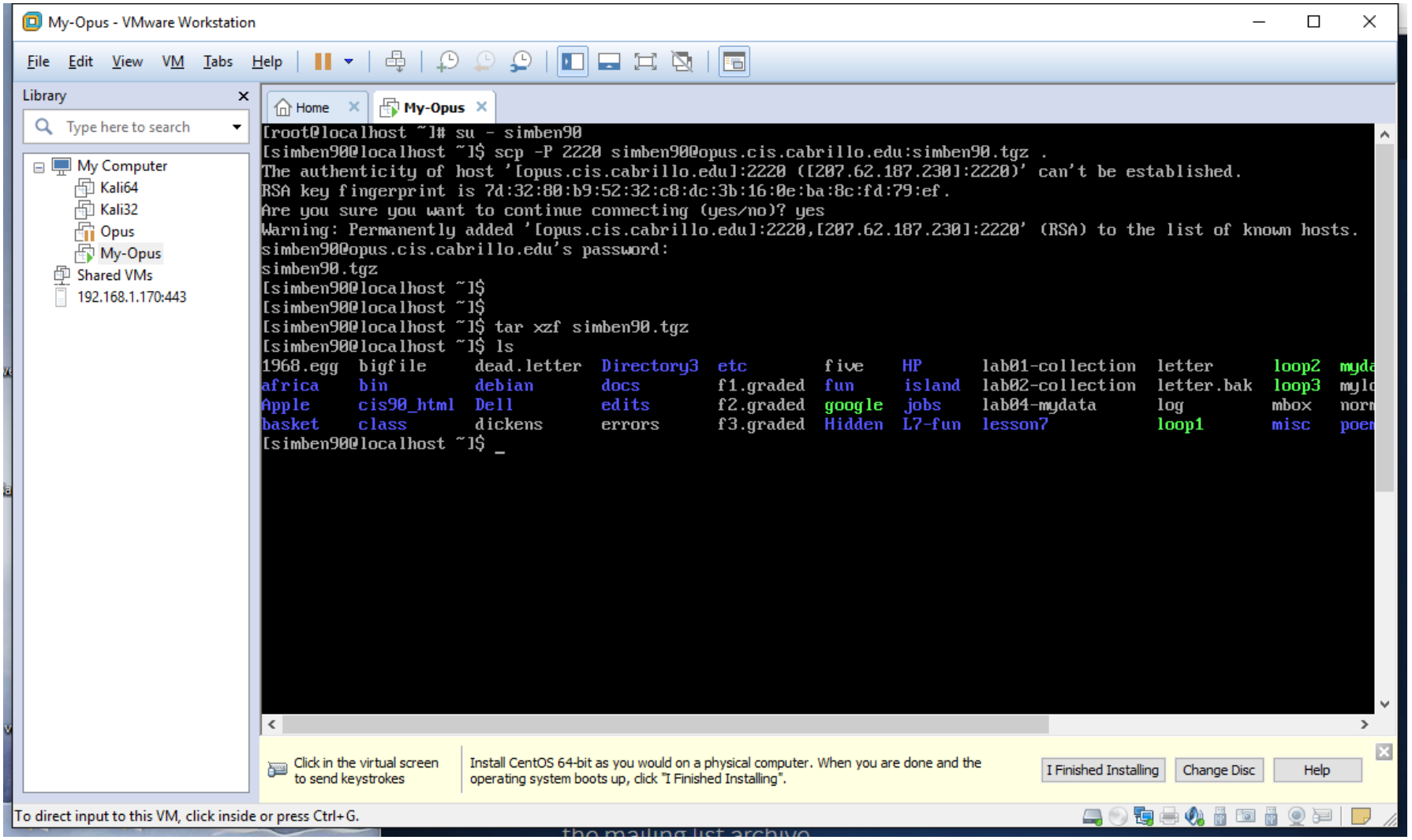


Login as root

```
adduser simben90
passwd simben90
tail /etc/passwd
```



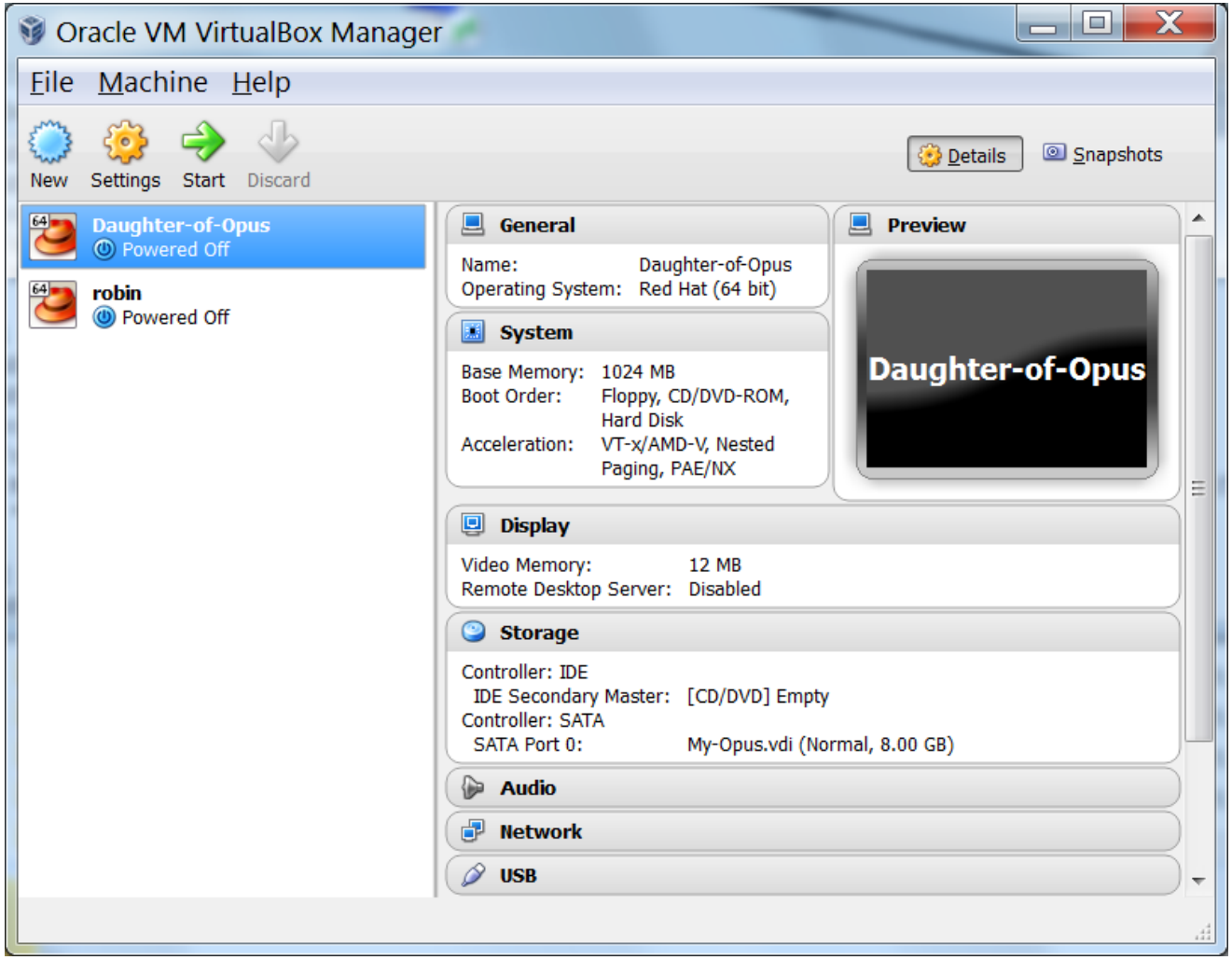
Test network settings




```
su - simben90
scp -P 2220 simben90@opus.cis.cabrillo.edu:simben90.tgz .
tar xzf simben90.tgz
```

Virtual Box

Oracle VirtualBox

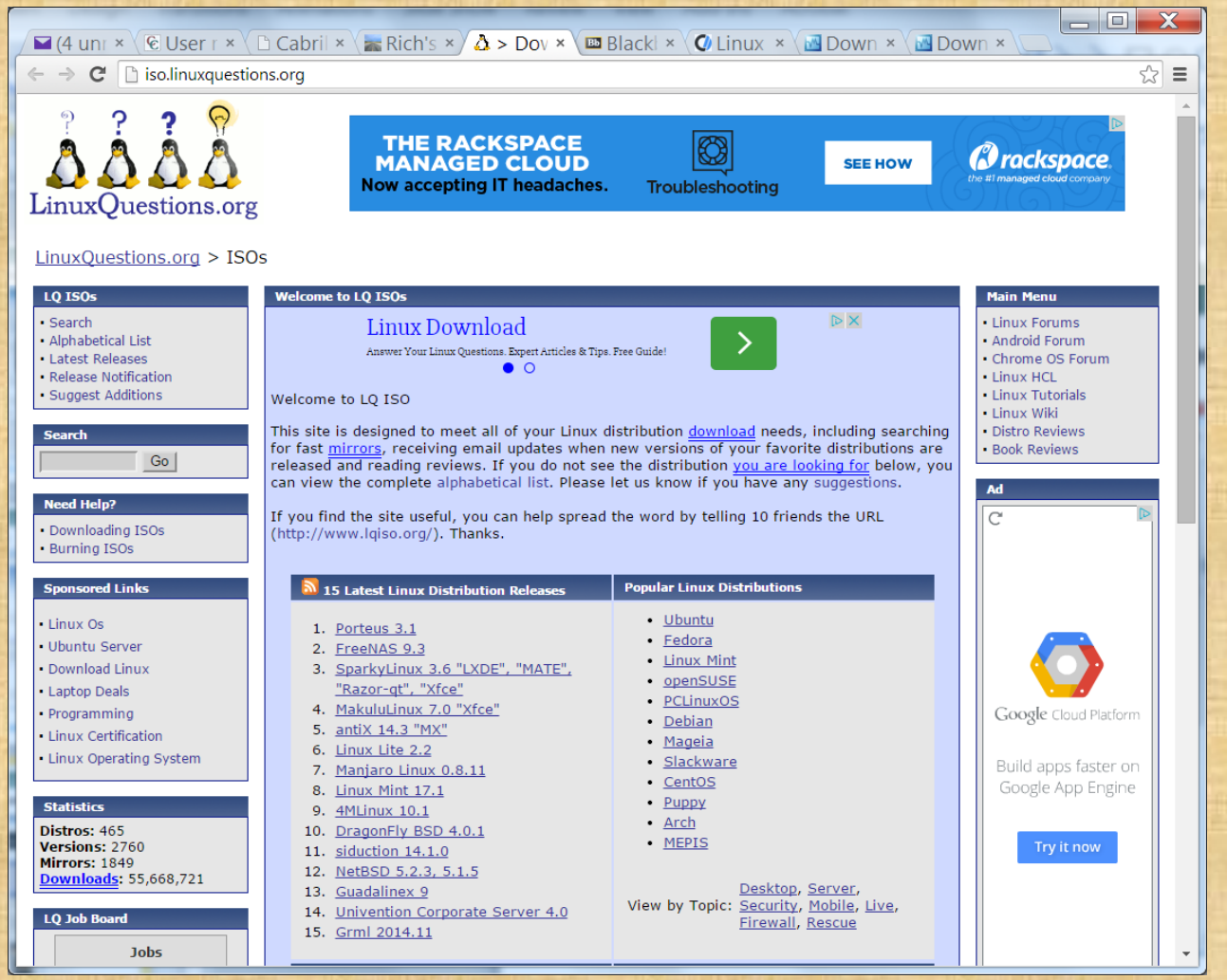


Provides you with an empty (No OS) virtual computer

virtualbox.org

Downloading VirtualBox

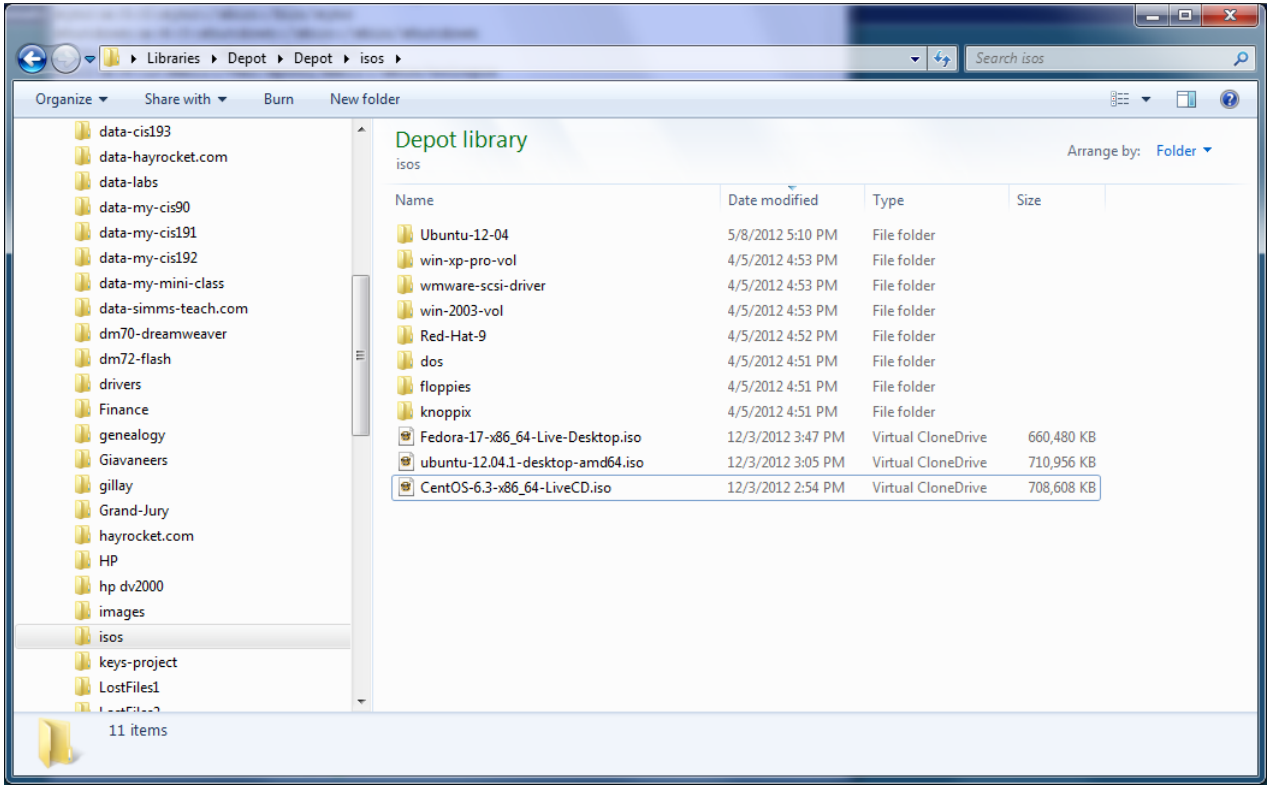
http://iso.linuxquestions.org/



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

centos.org

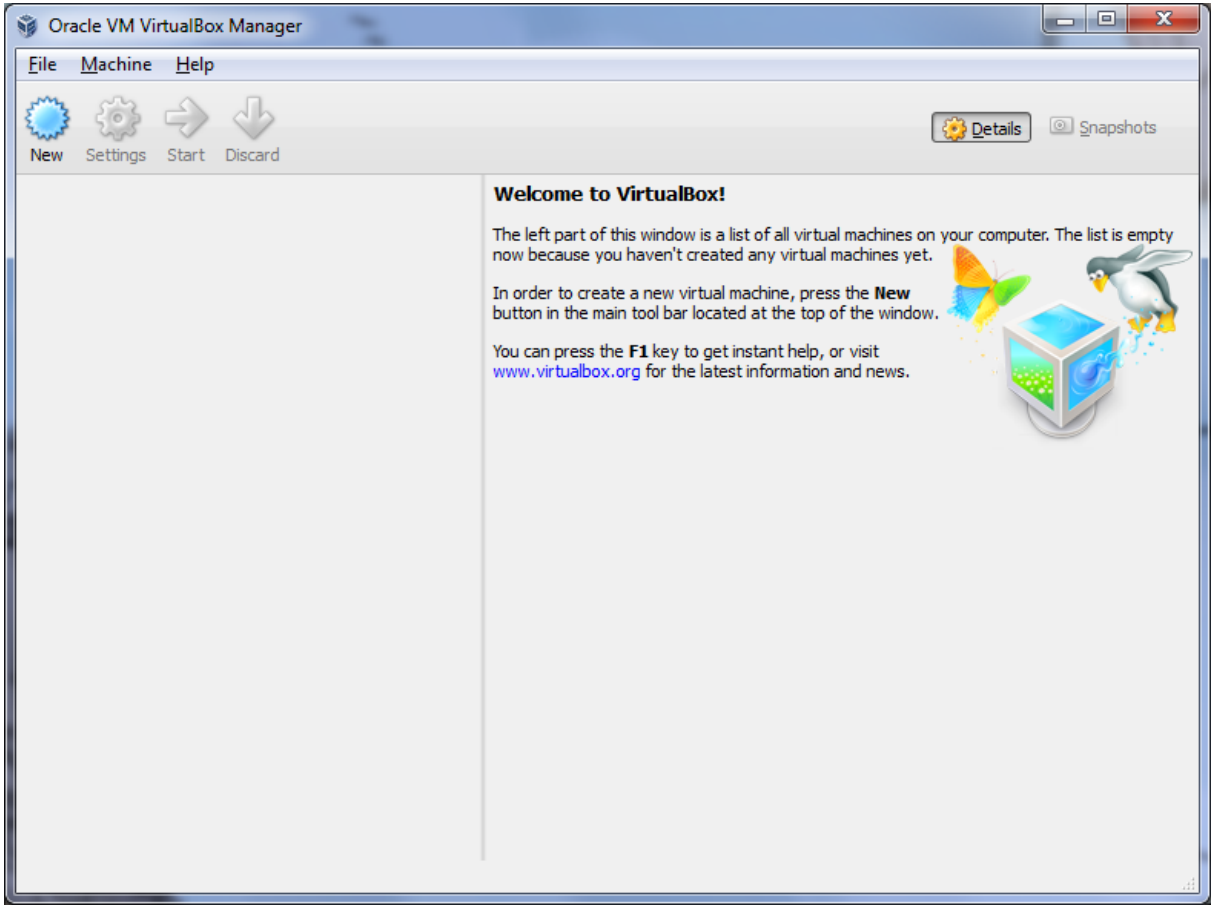
Use the CentOS Distro to make your own Opus



Download an iso image of the Linux distribution

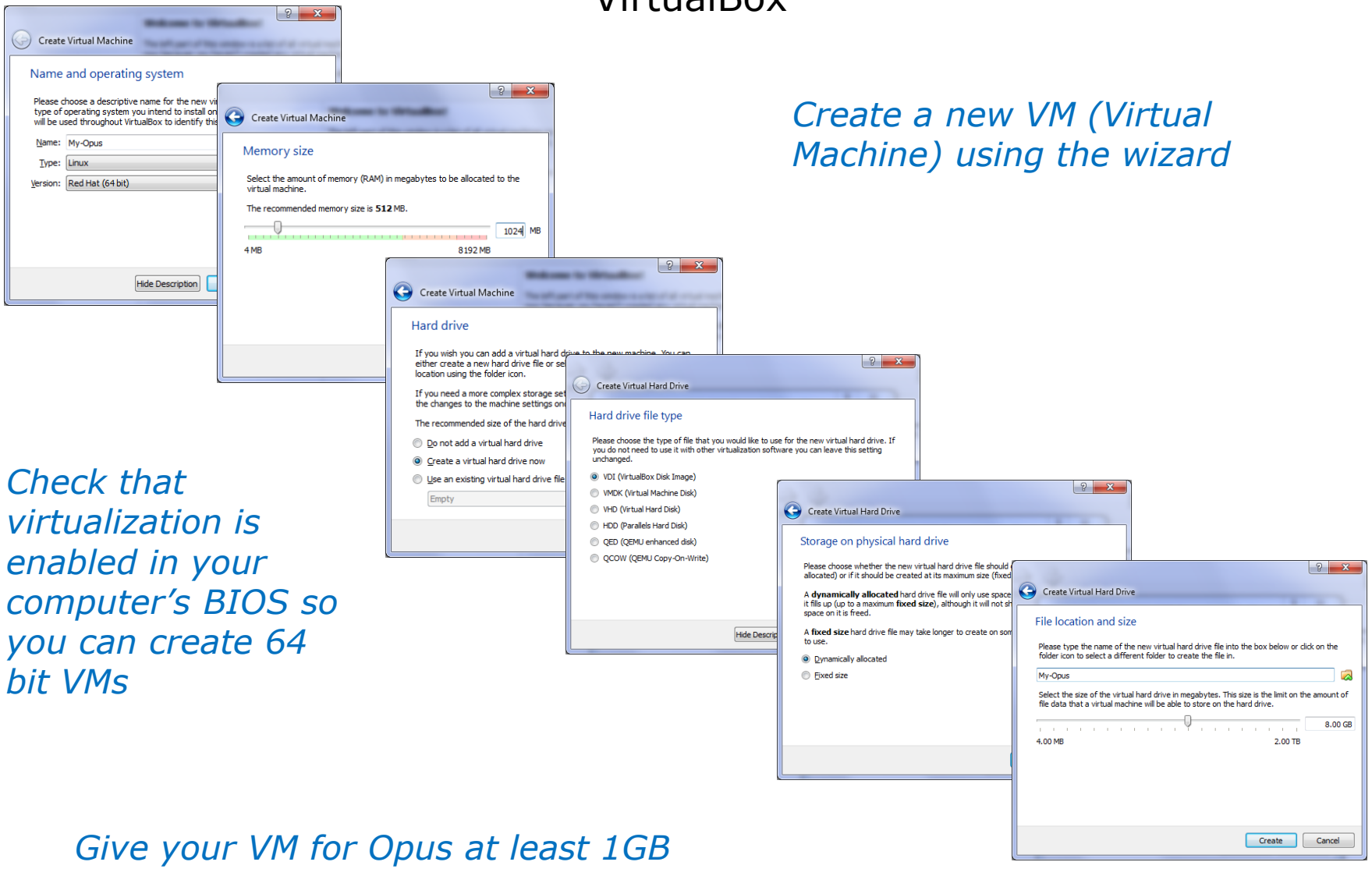
VirtualBox

Click the New button to create a new VM.



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

VirtualBox

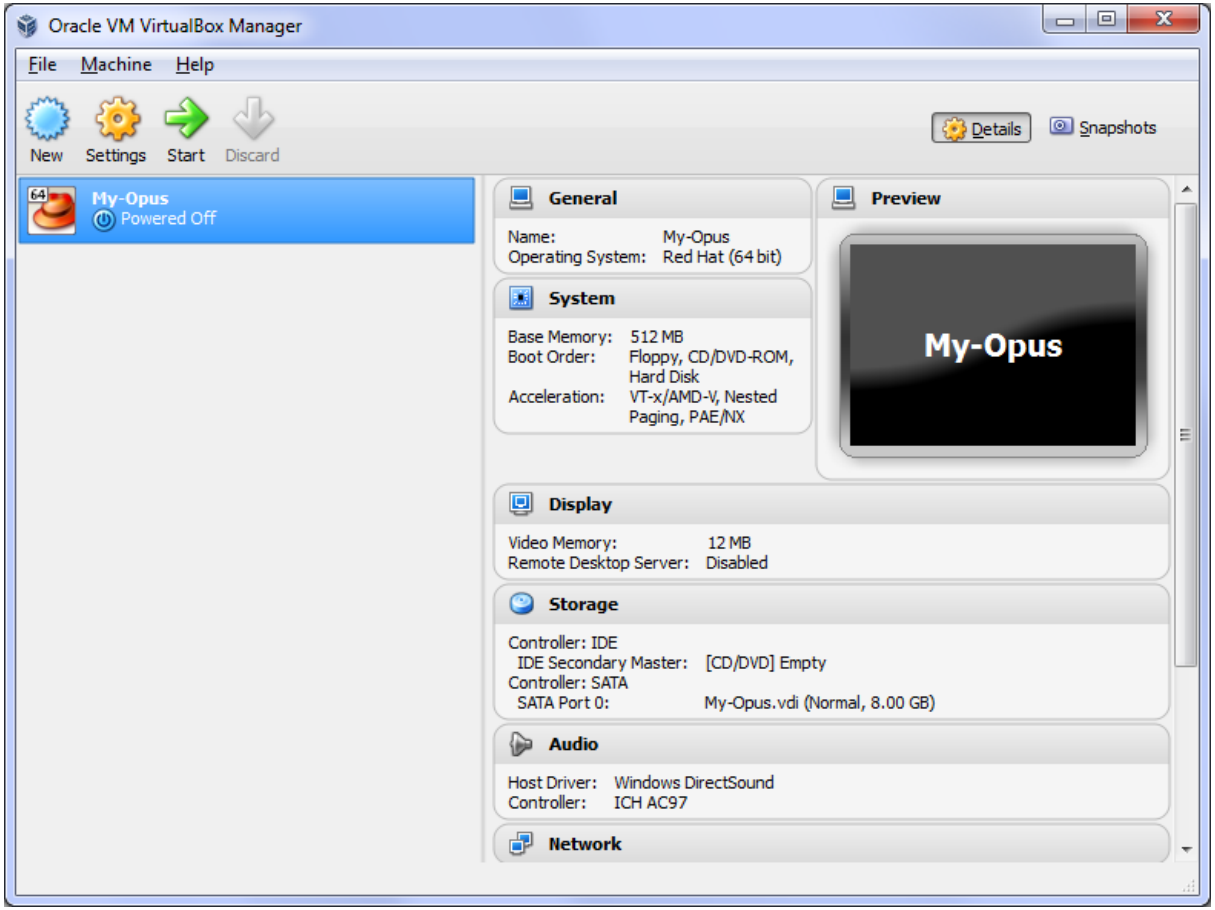


Create a new VM (Virtual Machine) using the wizard

Check that virtualization is enabled in your computer's BIOS so you can create 64 bit VMs

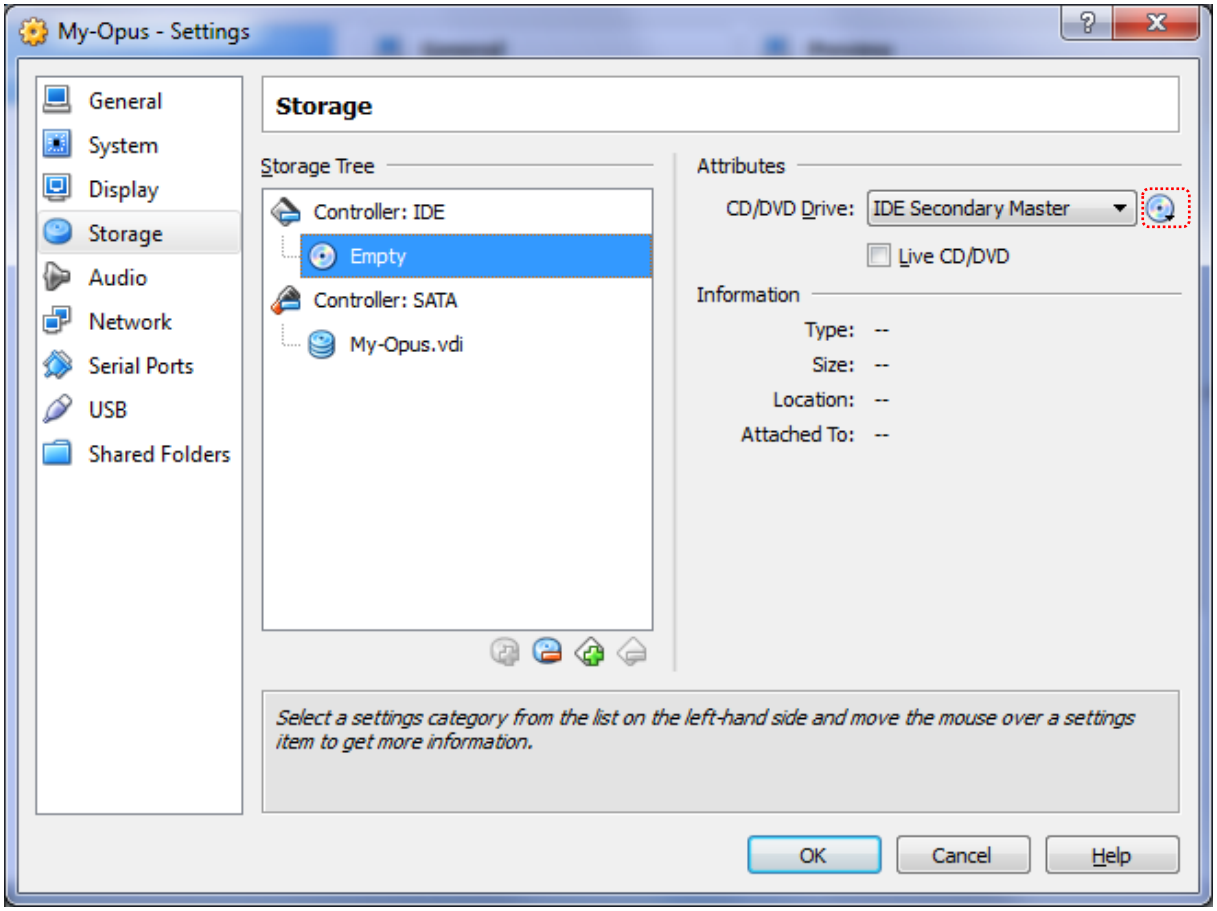
Give your VM for Opus at least 1GB of memory and an 8GB hard drive

VirtualBox



The new VM has no operating system

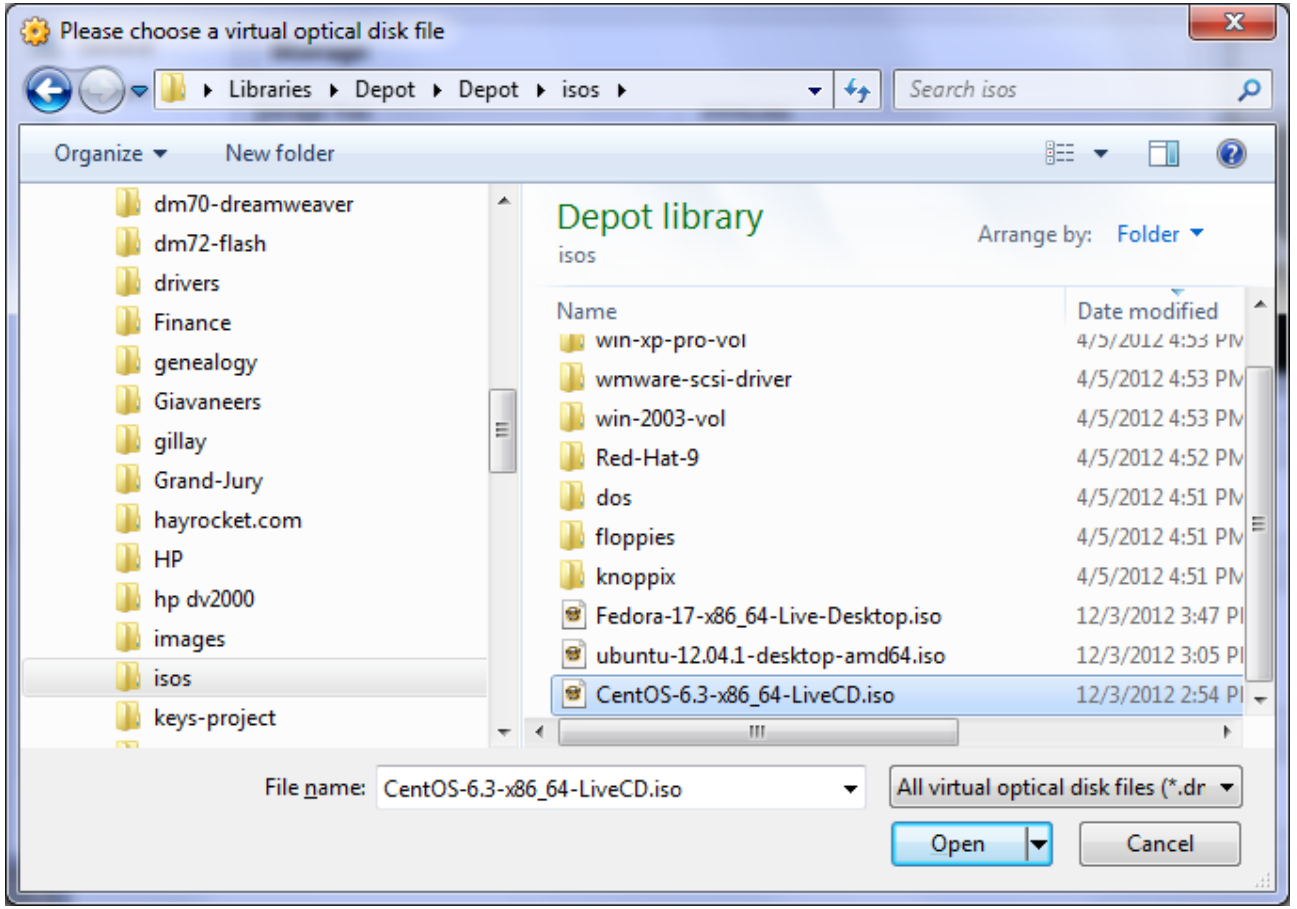
VirtualBox



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.

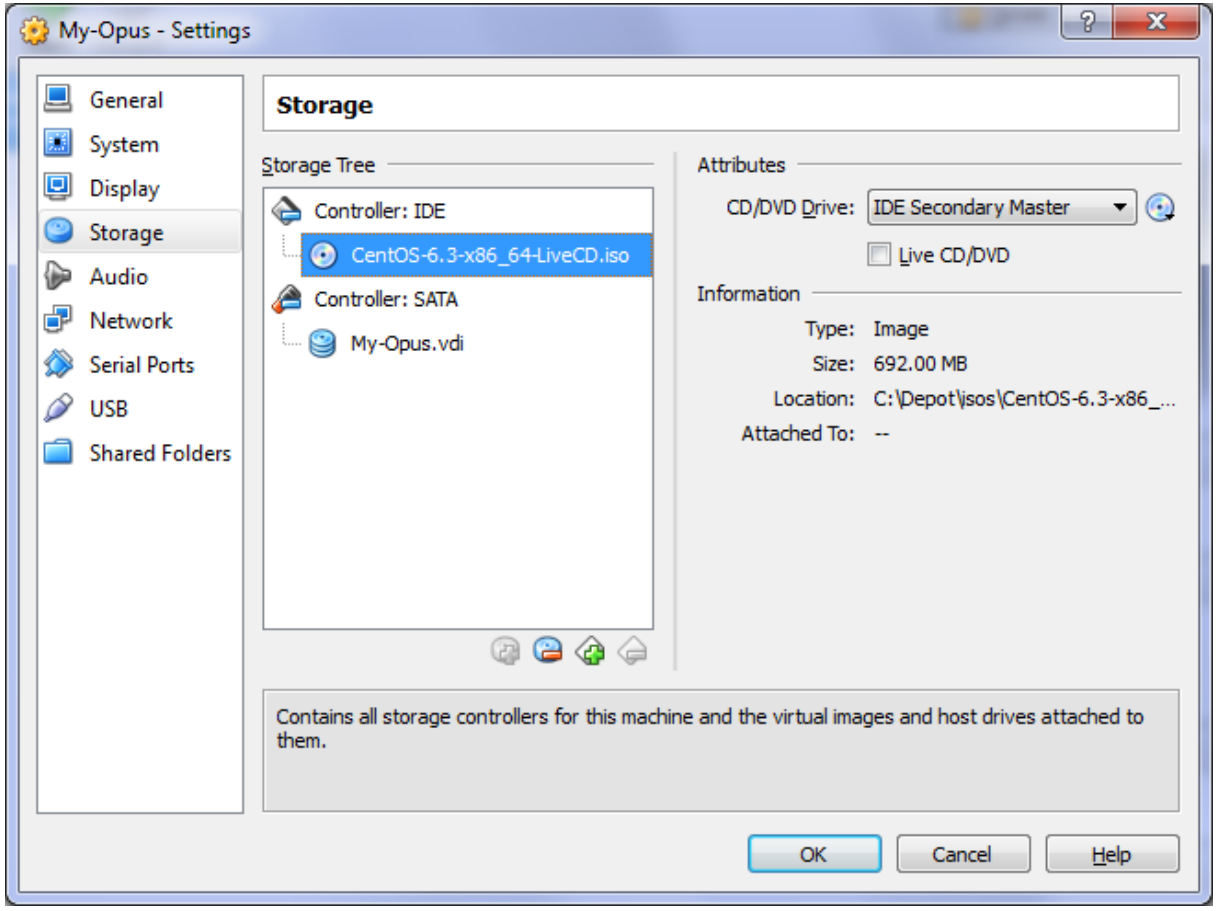
VirtualBox



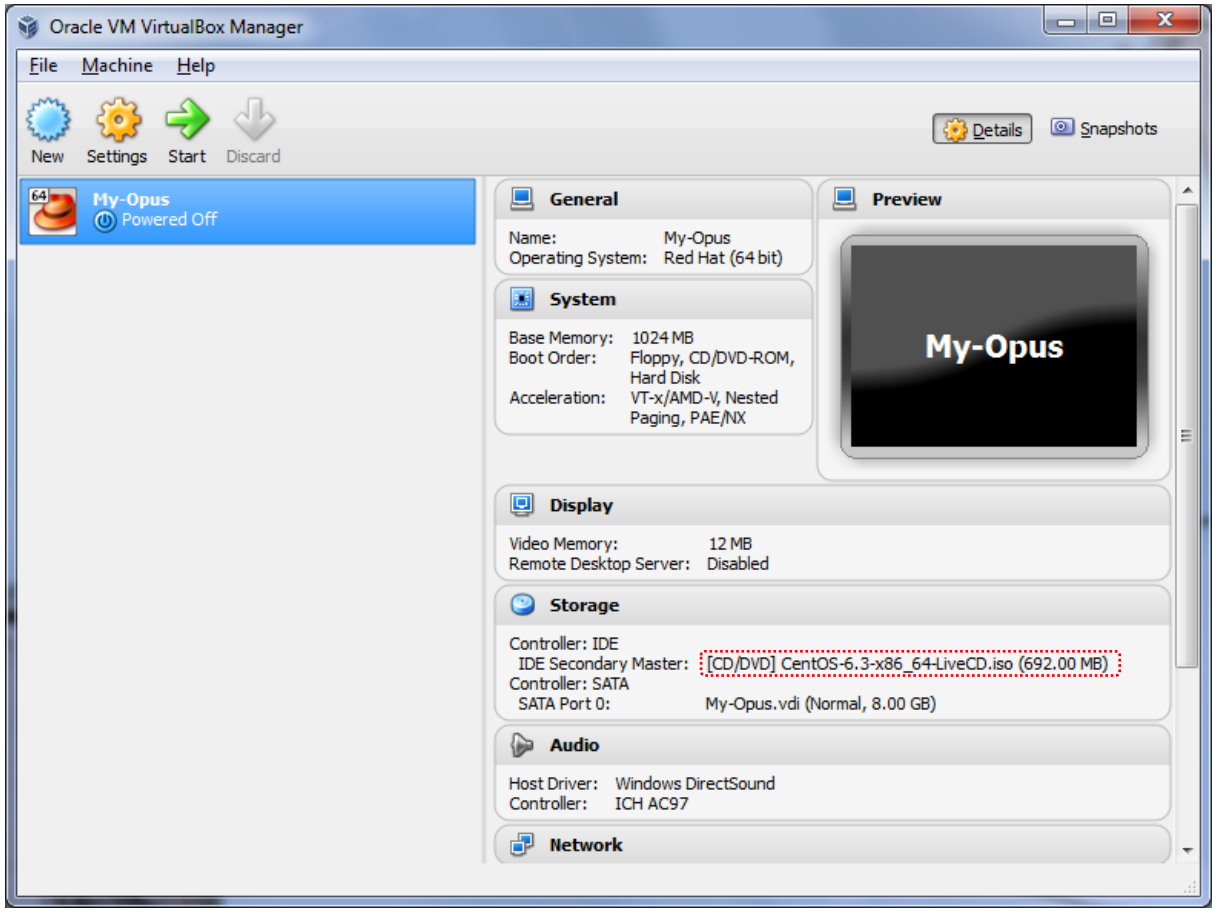
Locate the ISO image to install

CentOS-6.3-x86_64-LiveCD.iso

VirtualBox

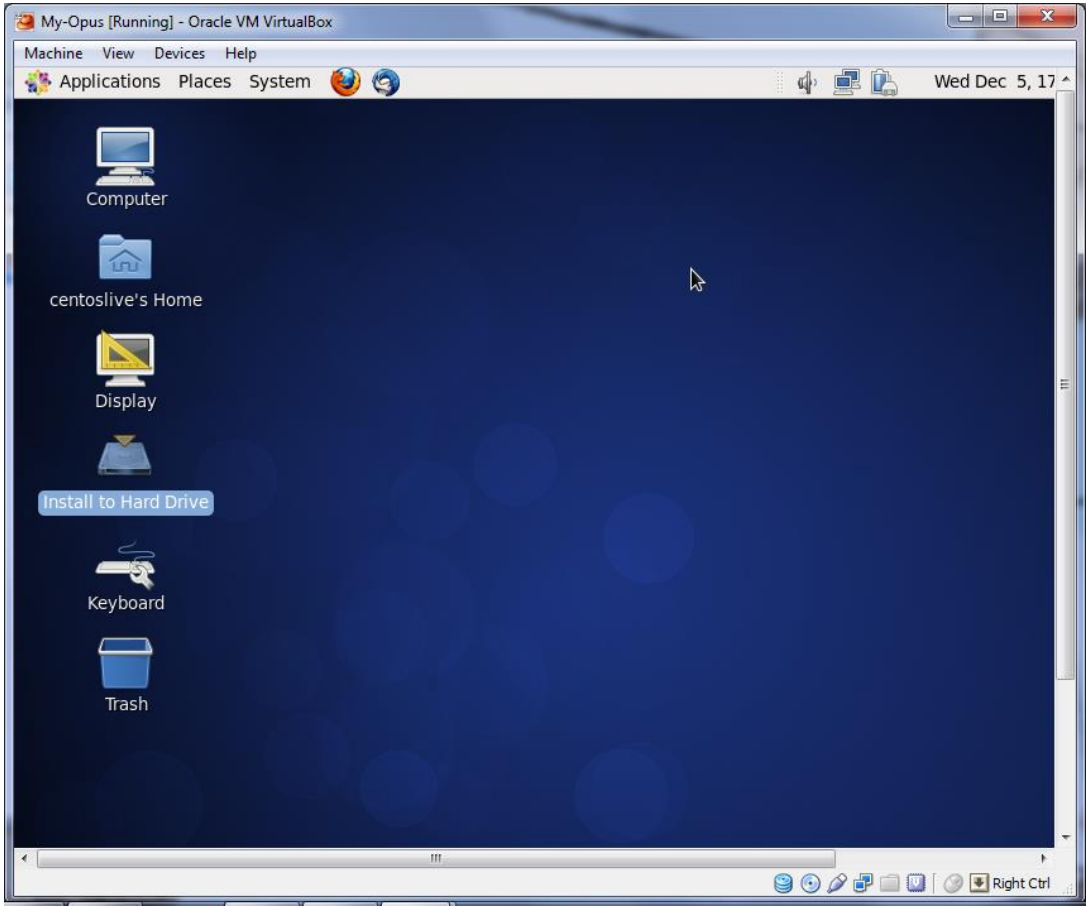

My-Opus - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
Storage
Storage Tree
Controller: IDE
CentOS-6.3-x86_64-LiveCD.iso
Controller: SATA
My-Opus.vdi
Attributes
CD/DVD Drive:
IDE Secondary Master
Live CD/DVD
Information
Type: Image
Size: 692.00 MB
Location: C:\Depot\isos\CentOS-6.3-x86_...
Attached To: --
Contains all storage controllers for this machine and the virtual images and host drives attached to them.
OK
Cancel
Help

VirtualBox



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

VirtualBox



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

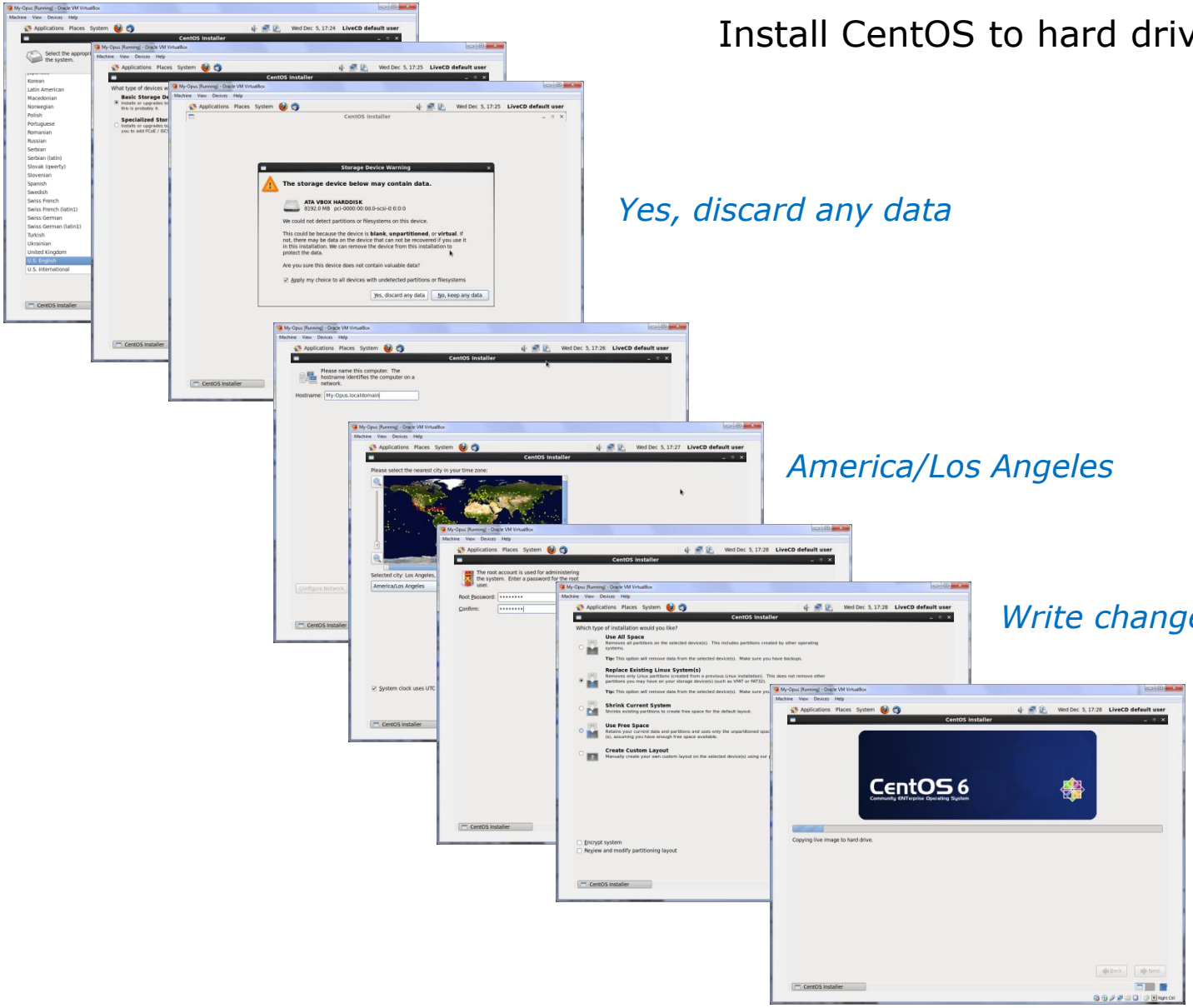
Otherwise just let it boot up using the live image which runs in memory and is not installed to the hard drive.

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

VirtualBox

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

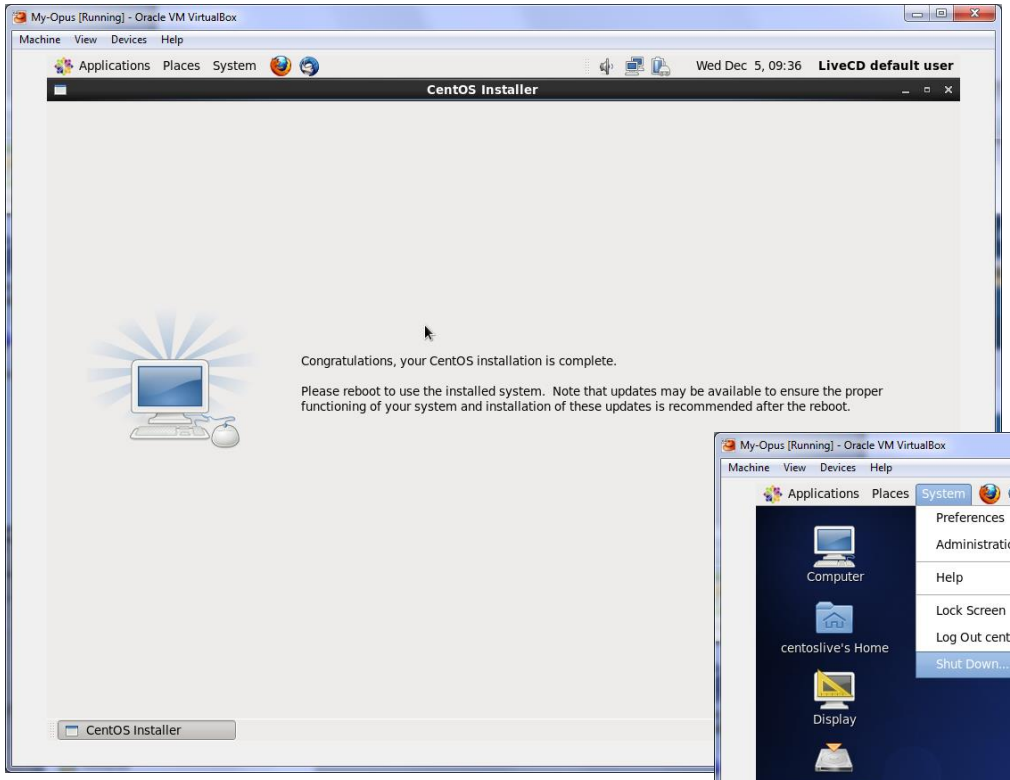
Install CentOS to hard drive



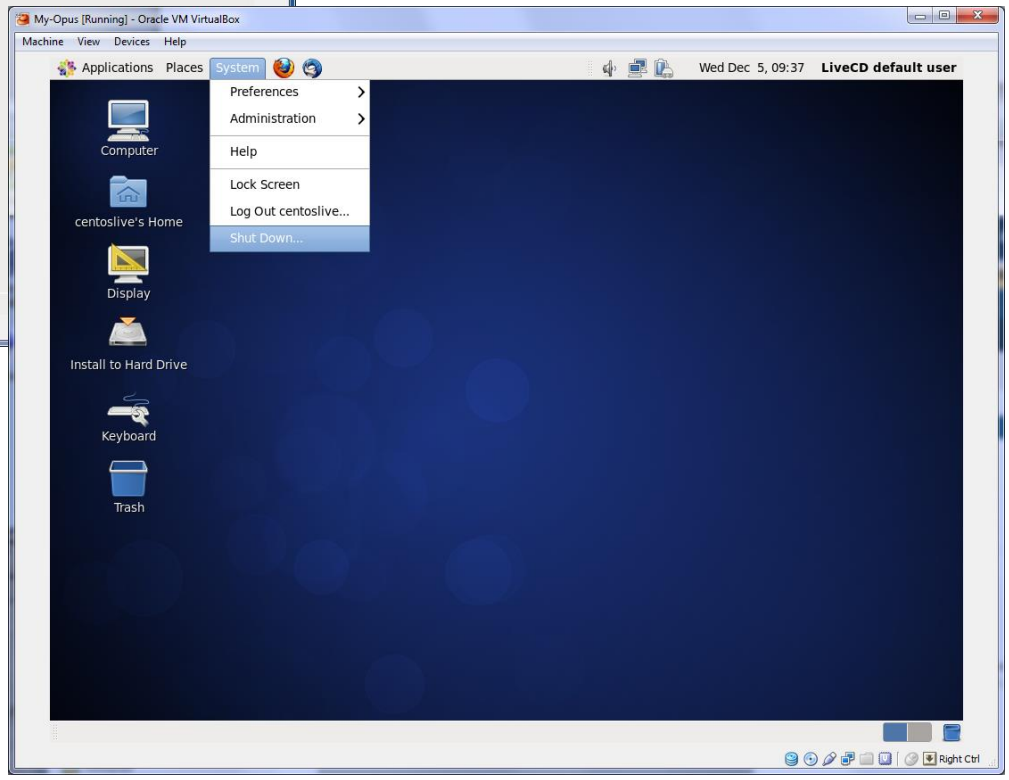
Yes, discard any data

America/Los Angeles

Write changes to disk

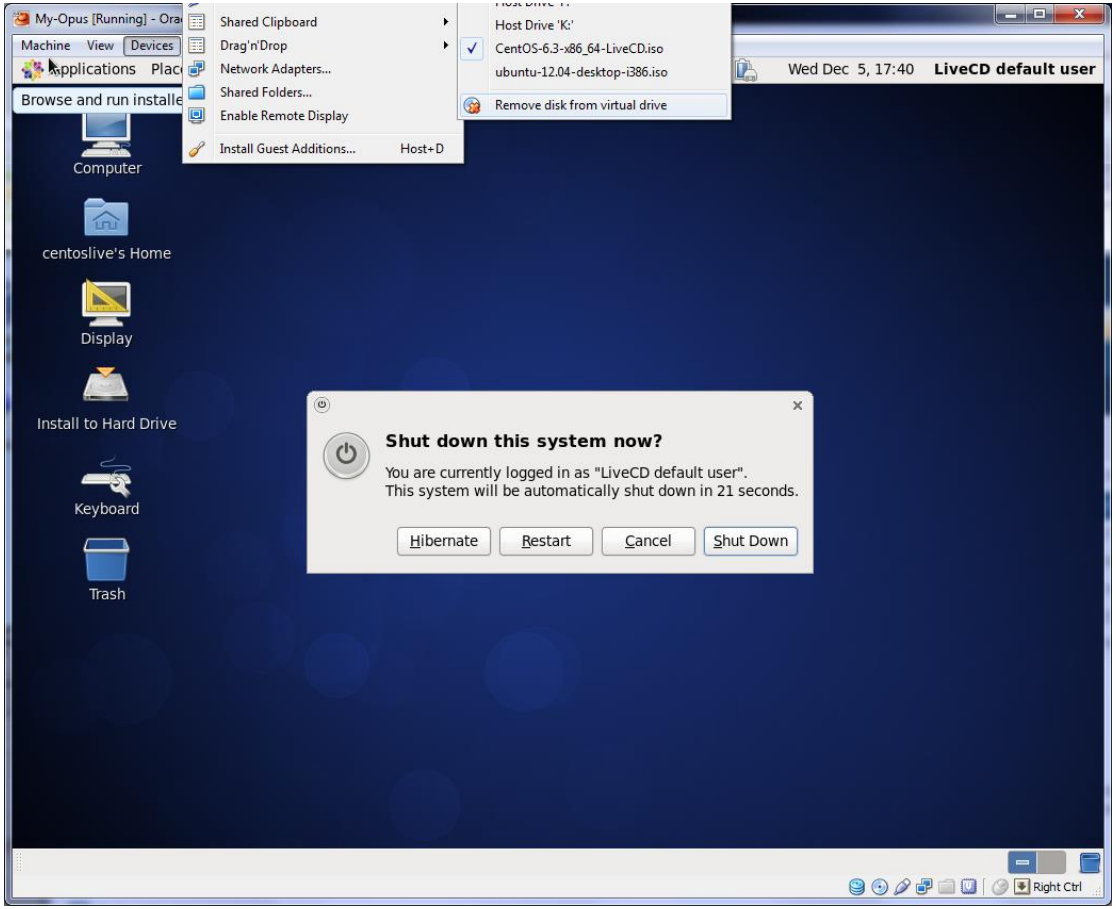


VirtualBox

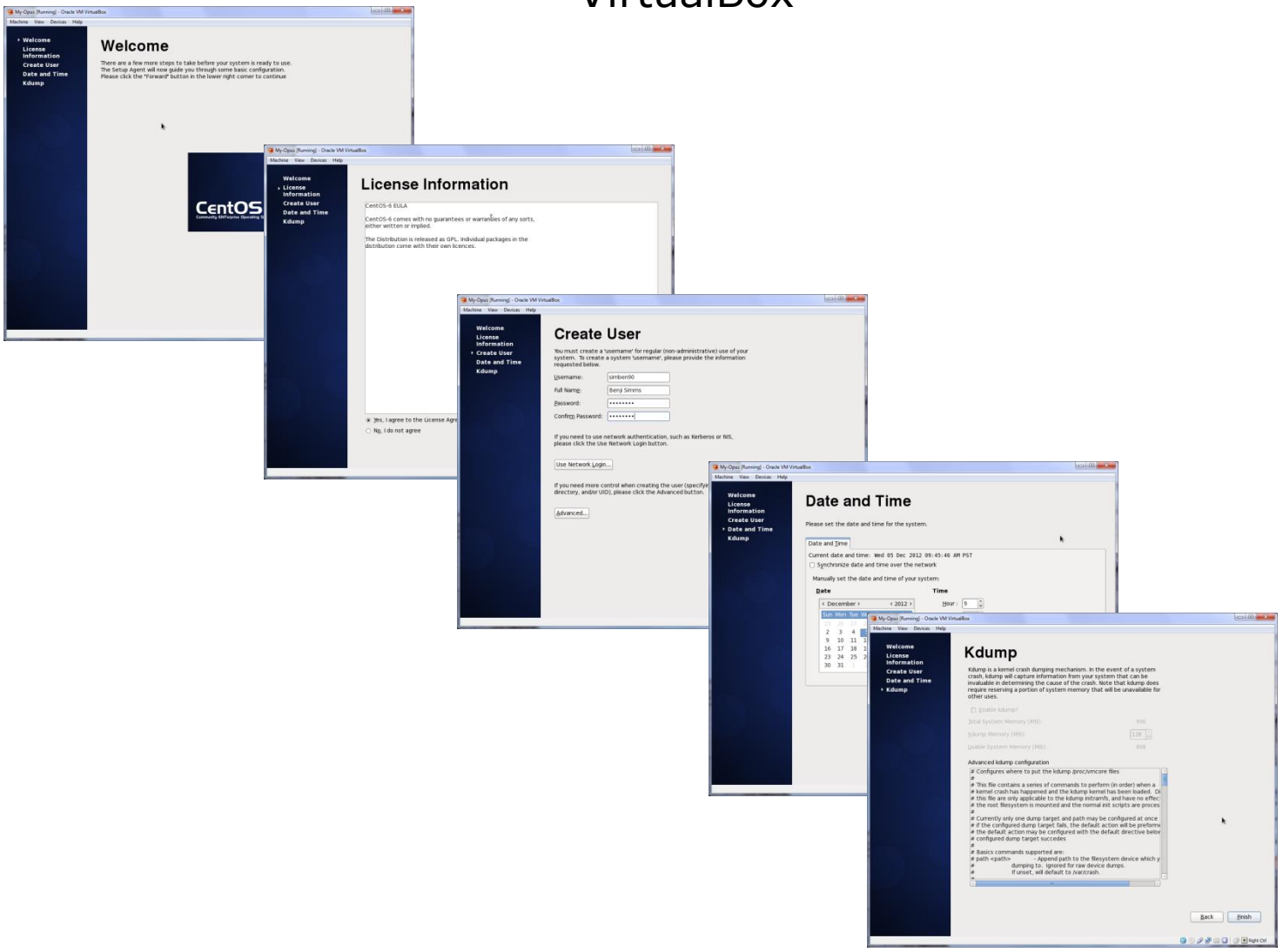


Shutdown the system and before starting again remove the CD from the drive (Settings > Storage)

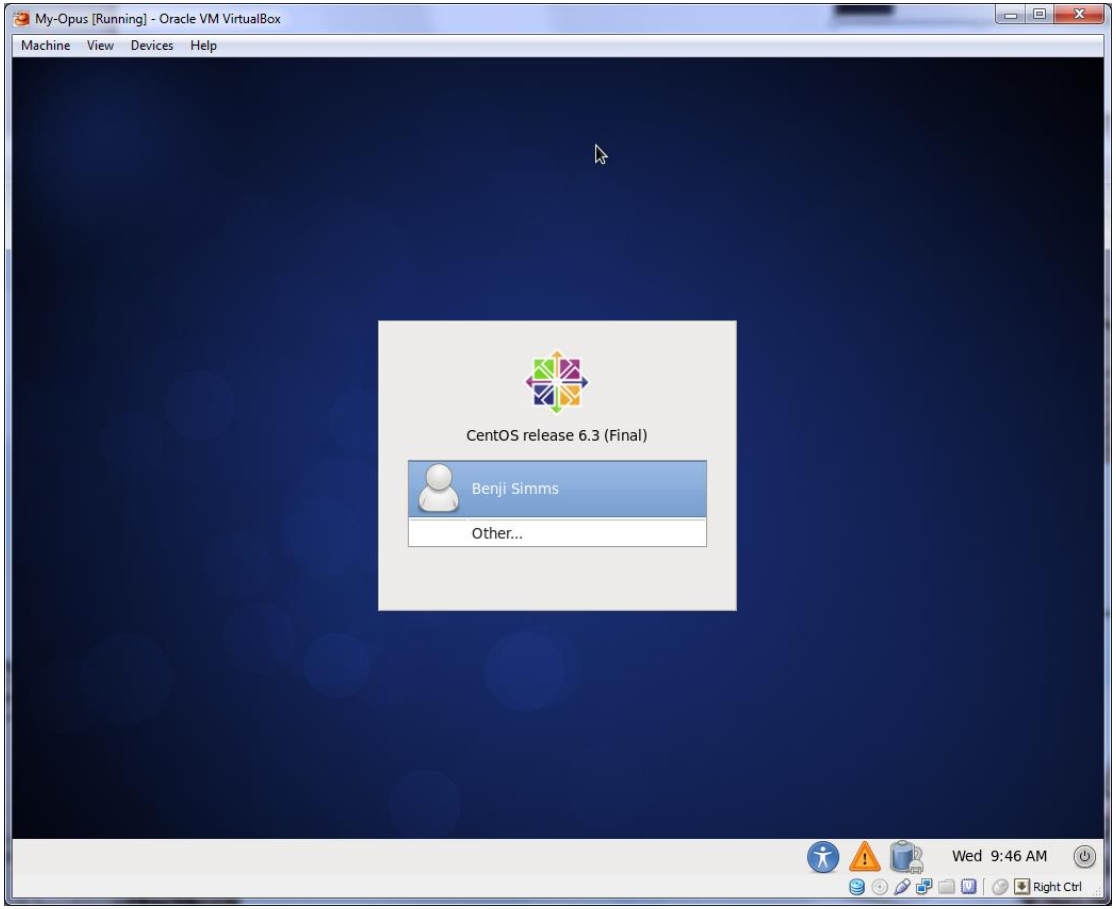
VirtualBox


My-Opus [Running] - Ora
Machine View Devices
Applications Plac
Browse and run installe
Shared Clipboard
Drag'n'Drop
Network Adapters...
Shared Folders...
Enable Remote Display
Install Guest Additions... Host+D
Host Drive 'K:'
CentOS-6.3-x86_64-LiveCD.iso
ubuntu-12.04-desktop-i386.iso
Remove disk from virtual drive
Wed Dec 5, 17:40
LiveCD default user
Computer
centoslive's Home
Display
Install to Hard Drive
Keyboard
Trash
Shut down this system now?
You are currently logged in as "LiveCD default user".
This system will be automatically shut down in 21 seconds.
Hibernate
Restart
Cancel
Shut Down
Right Ctrl

VirtualBox


Welcome
License Information
Create User
Date and Time
Kdump
There are a few more steps to take before your system is ready to use.
The Setup Agent will now guide you through some basic configuration.
Please click the "Forward" button in the lower right corner to continue
CentOS
License Information
CentOS-6 EULA
CentOS-6 comes with no guarantees or warranties of any sorts, either written or implied.
The Distribution is released as GPL. Individual packages in the distribution come with their own licences.
Create User
You must create a 'username' for regular (non-administrative) use of your system. To create a system 'username', please provide the information requested below.
Username:
Full Name:
Password:
Confirm Password:
Use Network Login...
Advanced...
Date and Time
Please set the date and time for the system.
Synchronize date and time over the network
Kdump
Kdump is a kernel crash dumping mechanism. In the event of a system crash, kdump will capture information from your system that can be invaluable in determining the cause of the crash.
Back
Finish

Voilà



If you like doing this you will love CIS 191!

Project Presentations

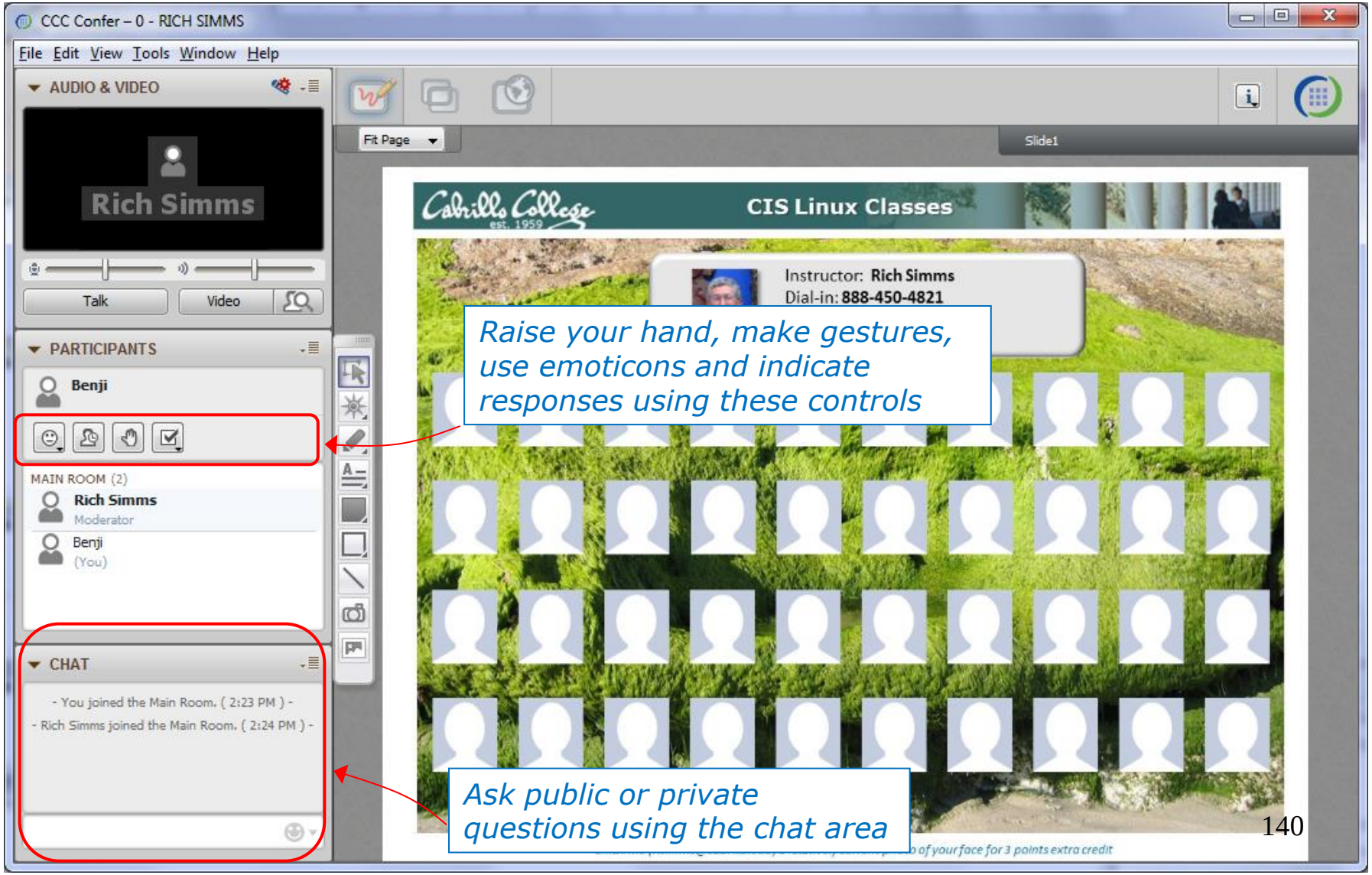
To demo your project and earn five points:

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!

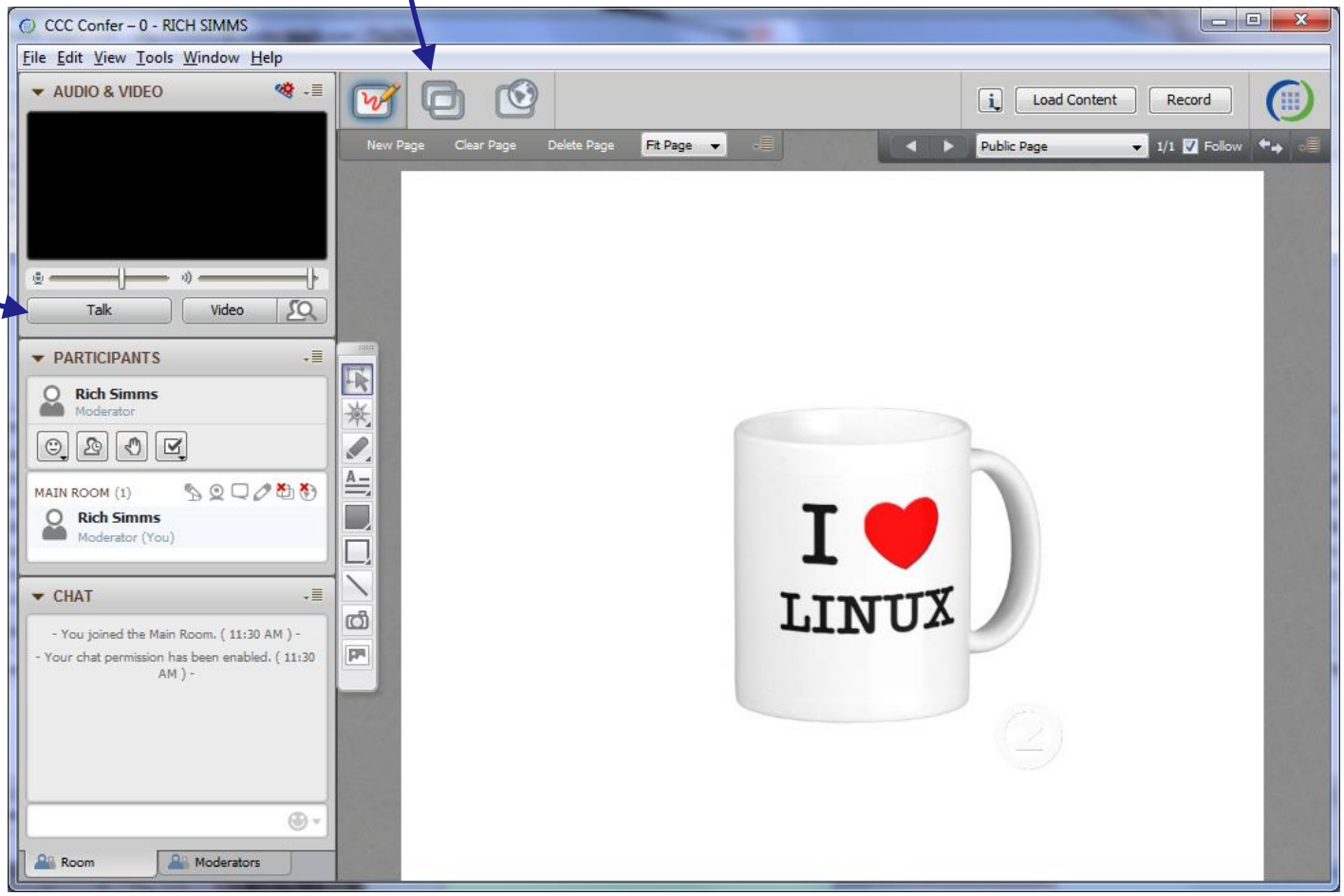
CCC Confer - Attending class online



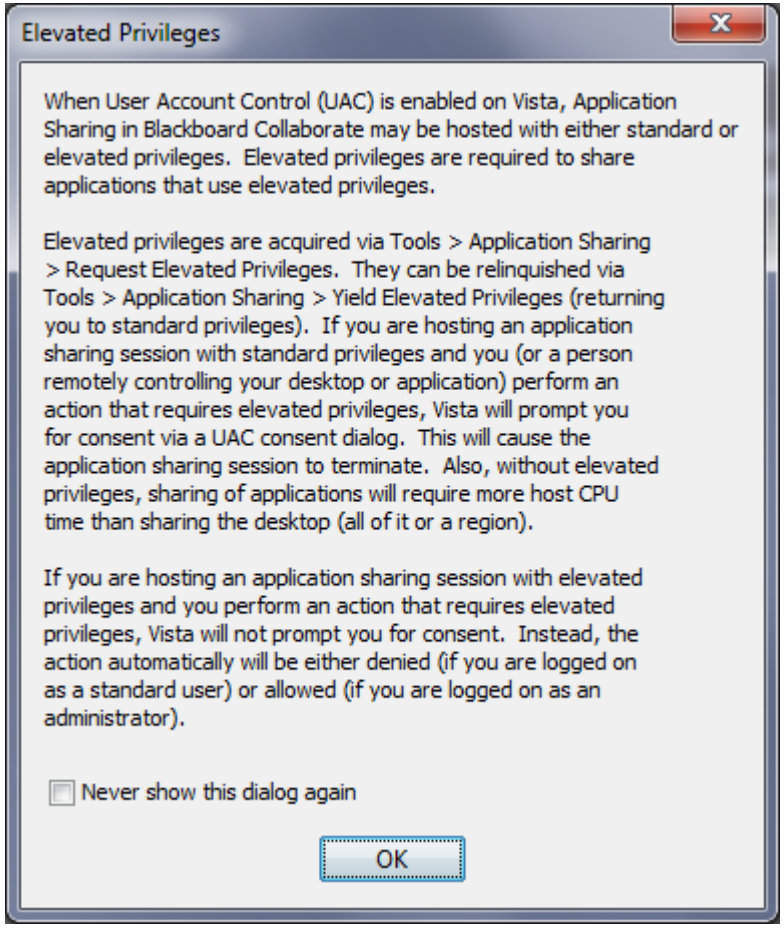
Sharing from CCC Confer

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

*Click **overlapping rectangles** to share*

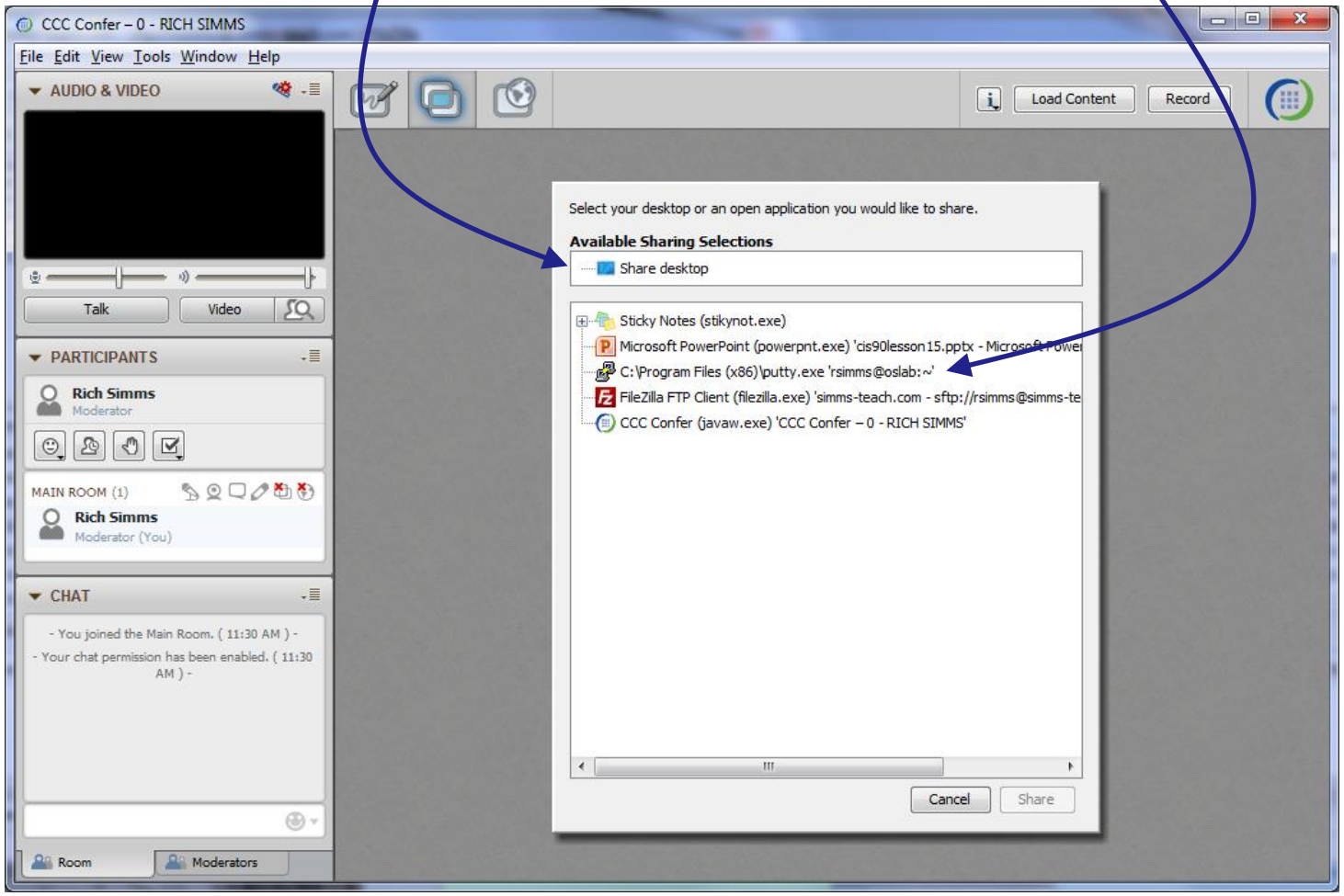


Sharing from CCC Confer



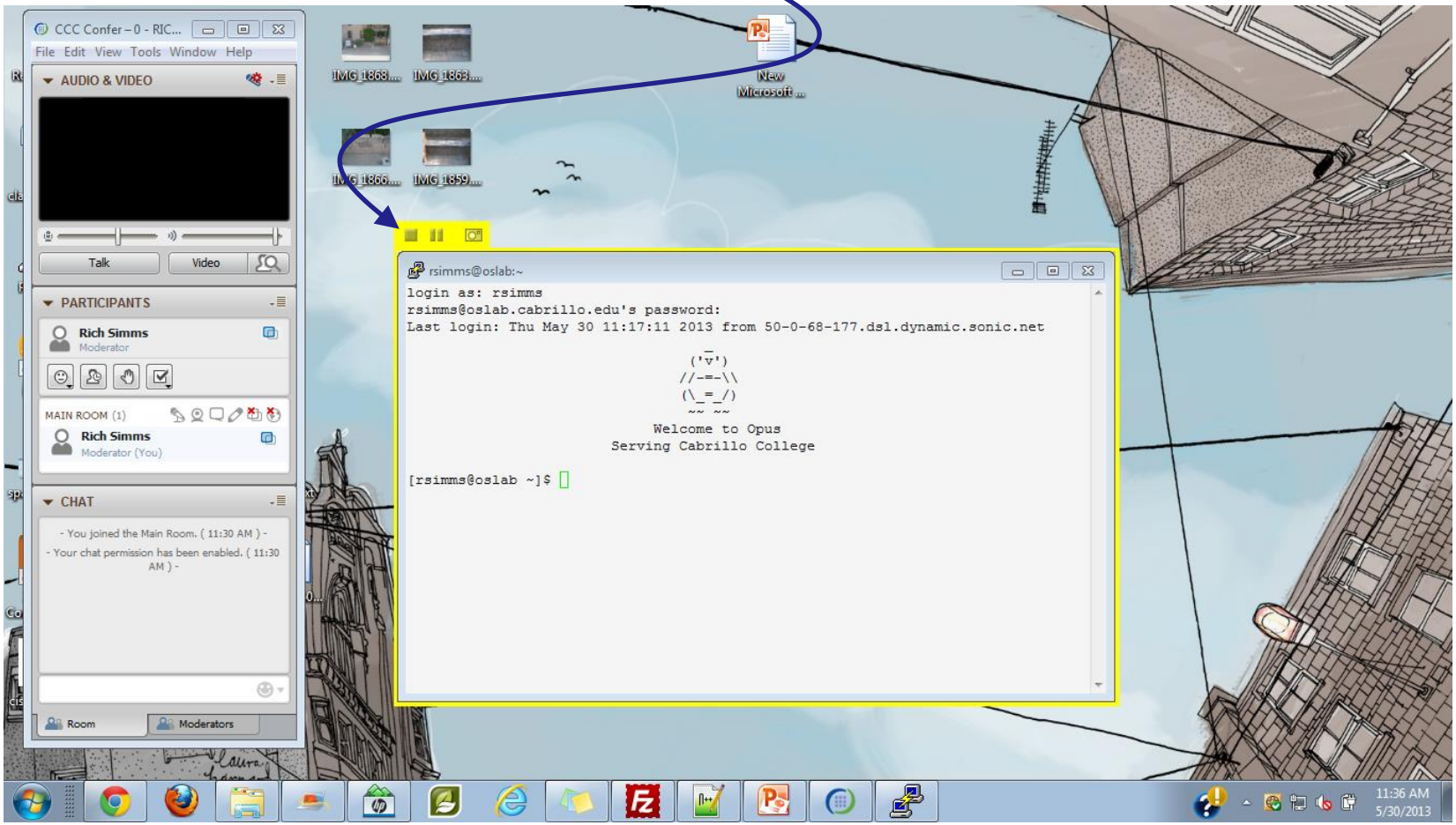
Sharing from CCC Confer

Either share putty/terminal or entire desktop



Sharing from CCC Confer

Click stop symbol to end sharing



Assignment

Do Practice Test #3
Do Practice Test #3
Do Practice Test #3
Do Practice Test #3
Do Practice Test #3

Five Posts

Lab X1 (extra credit)
Lab X2 (extra credit)

Wrap up

New commands:

tar	Backup and restore files
gzip	Zip and compress files
gunzip	Unzip files

New Files and Directories:

Next Class is the Final Exam (Test #3)

Test #3
Five Posts
Lab X1 (extra credit)
Lab X2 (extra credit)

Backup

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

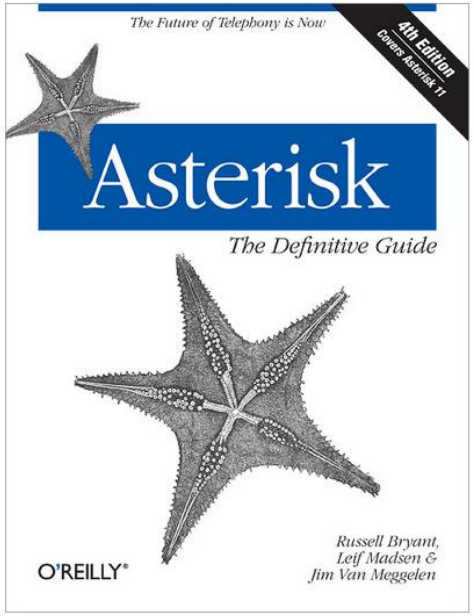
PSTN (Public Switched Telephone Network) - The global telecommunication infrastructure.

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.

FYI only



- 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/

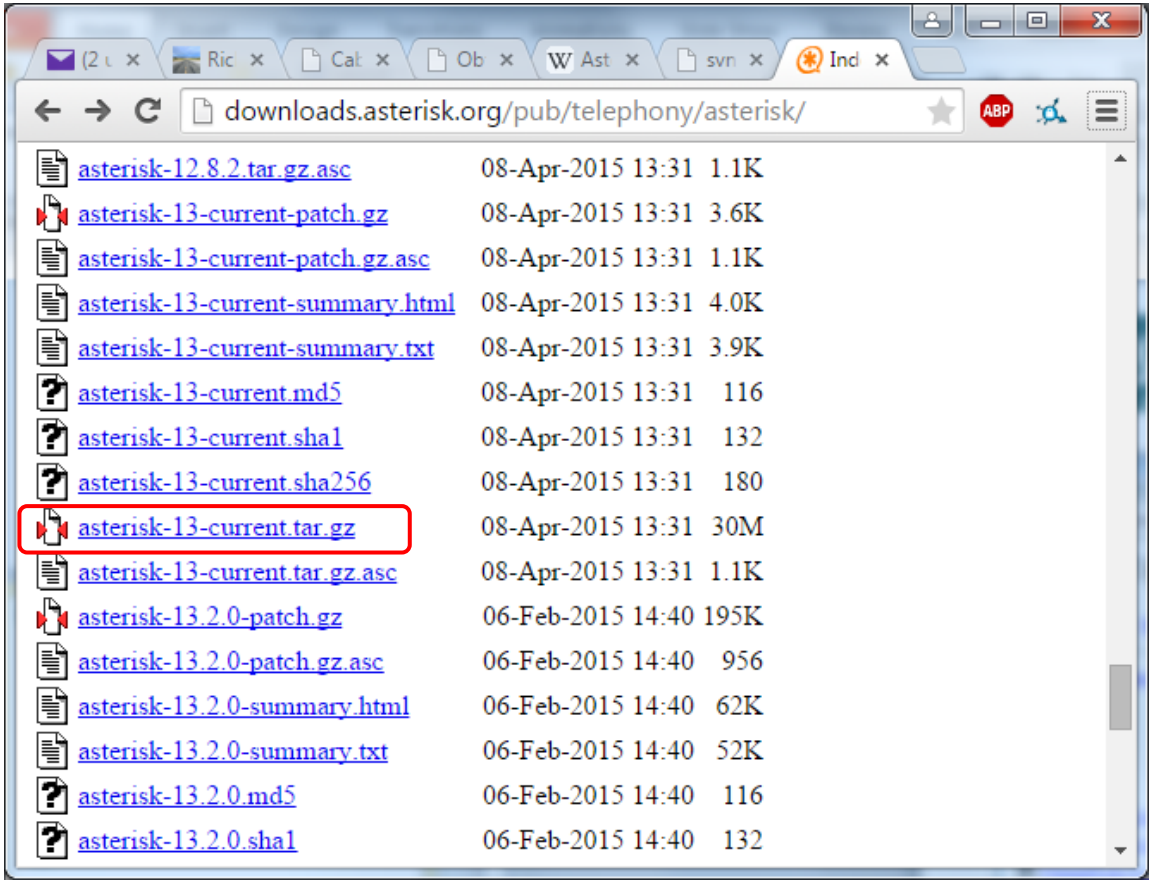
FreePBX
let freedom ring

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

Asterisk Source Code

FYI only

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



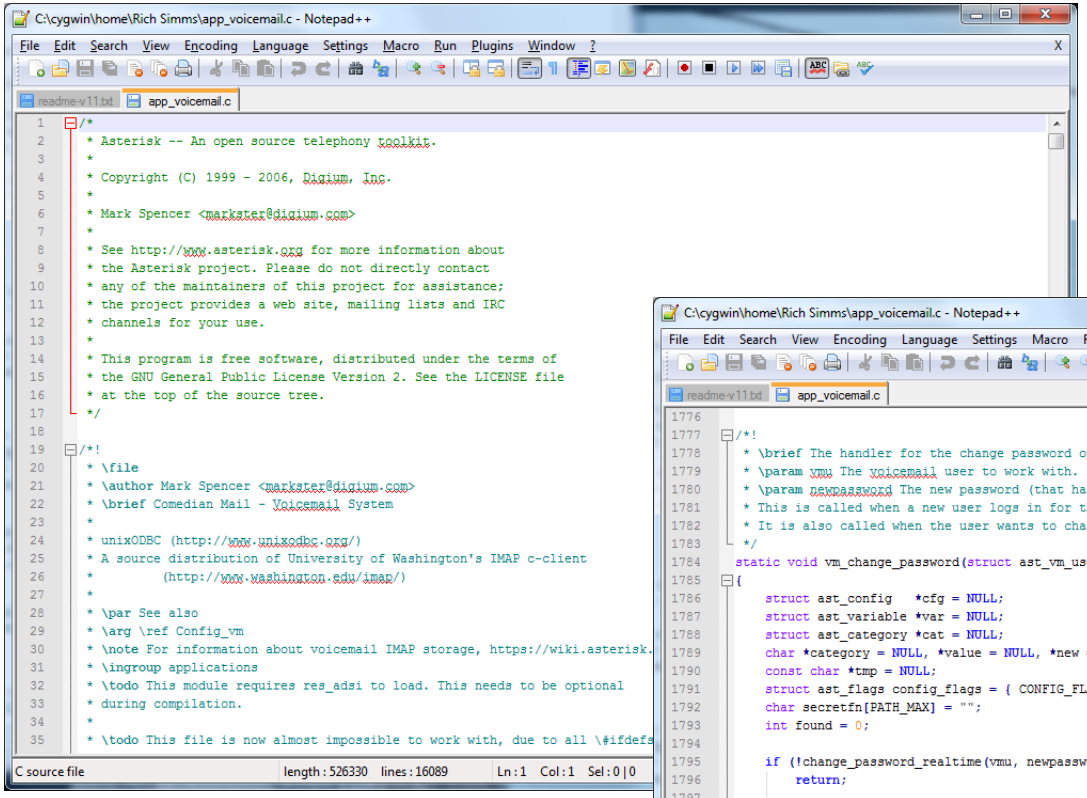
Asterisk is licensed under the GNU GPL which means you have the freedom to down load, view and modify the source code.

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

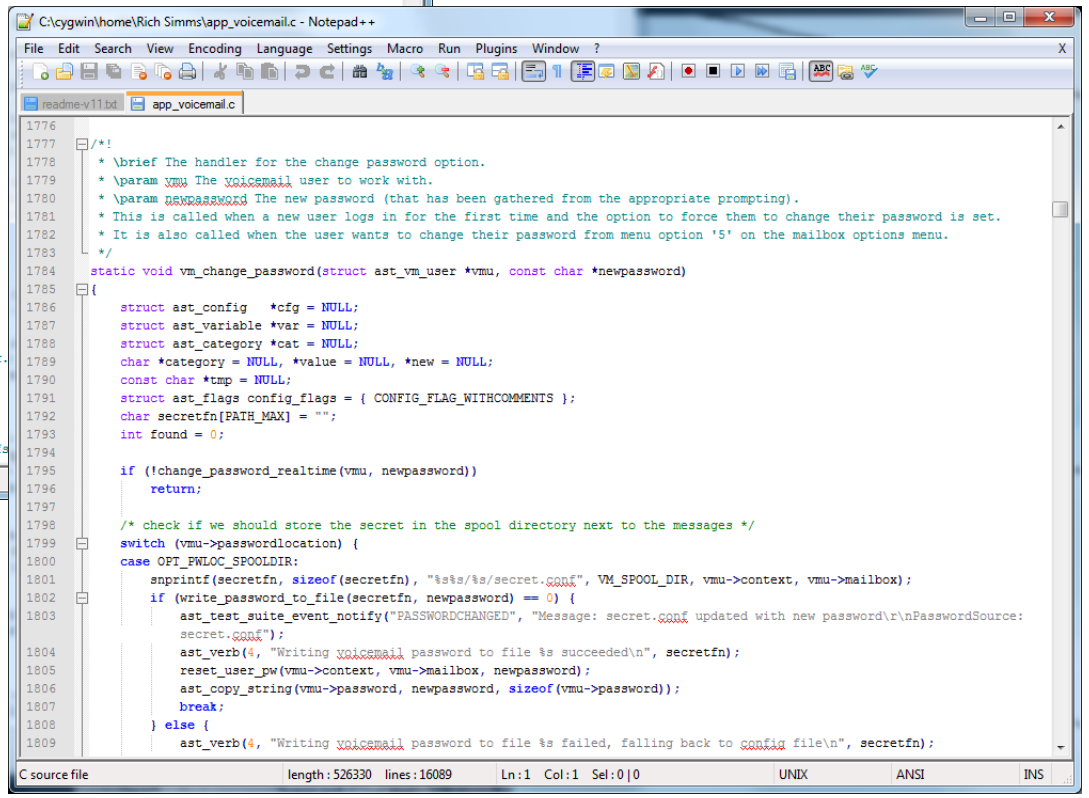
Obtaining the current version Asterisk source code to examine

Asterisk app_voicemail.c source code file

FYI only



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



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

FYI only

PC 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/

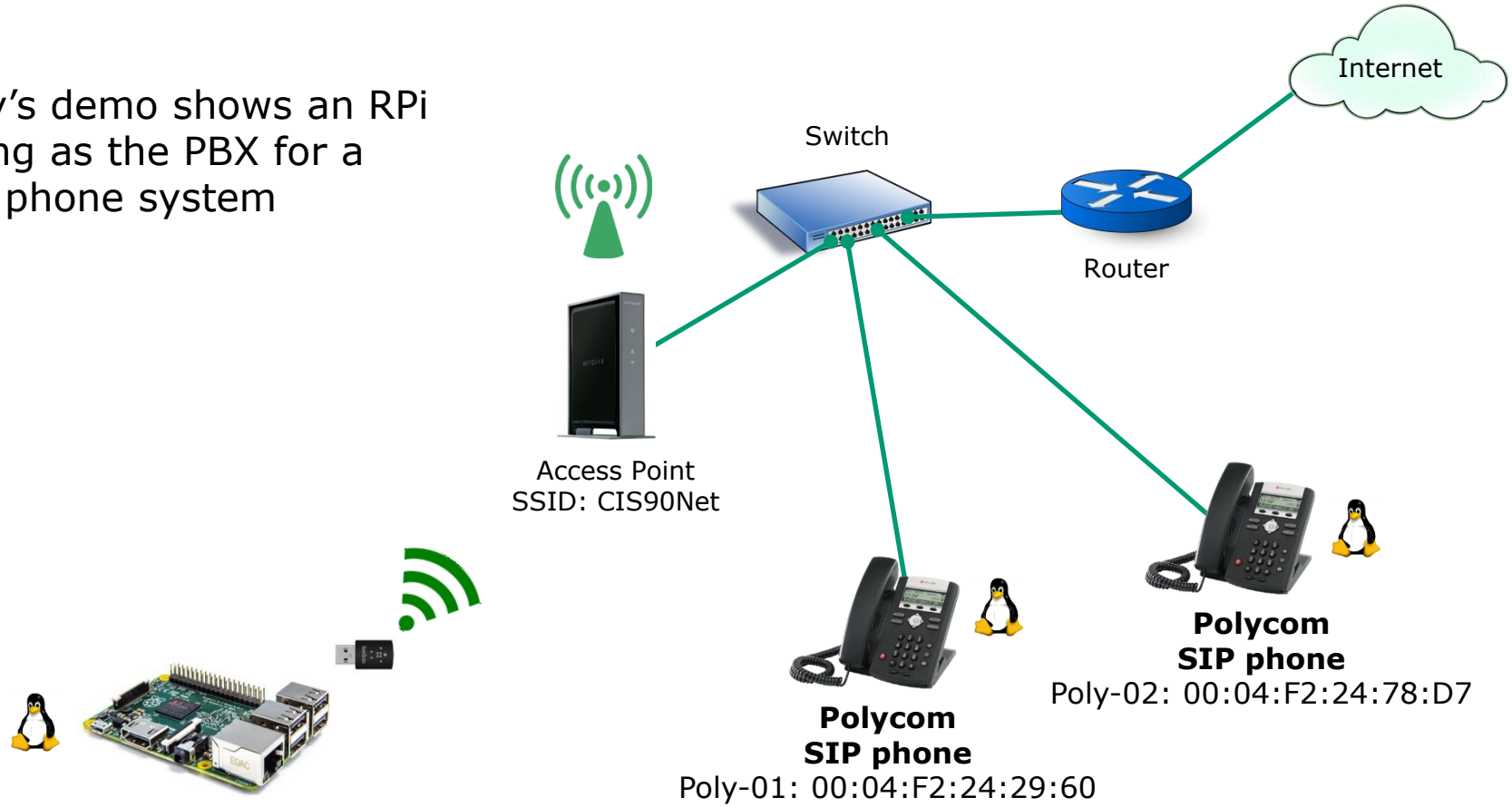
Android/iOS Soft Phone
Zoiper
Free
http://www.zoiper.com/

Network Switch
RouterBoard (Mikrotik) RB260GS
$38.95
http://www.streakwave.com/

SIP phones
Polycom SoundPoint IP 331
$15.00 each
http://ebay.com/

VOIP Demo on RPi and Polycom SIP phones

Today's demo shows an RPi serving as the PBX for a VOIP phone system



Download RPi raspbx image from
http://www.raspberry-asterisk.org/

Polycom SoundPoint IP Phones

FYI only

SIP phone
Polycom SoundPoint IP 331

Is it a phone?
Is it a computer?

Polycom

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-ltt, 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

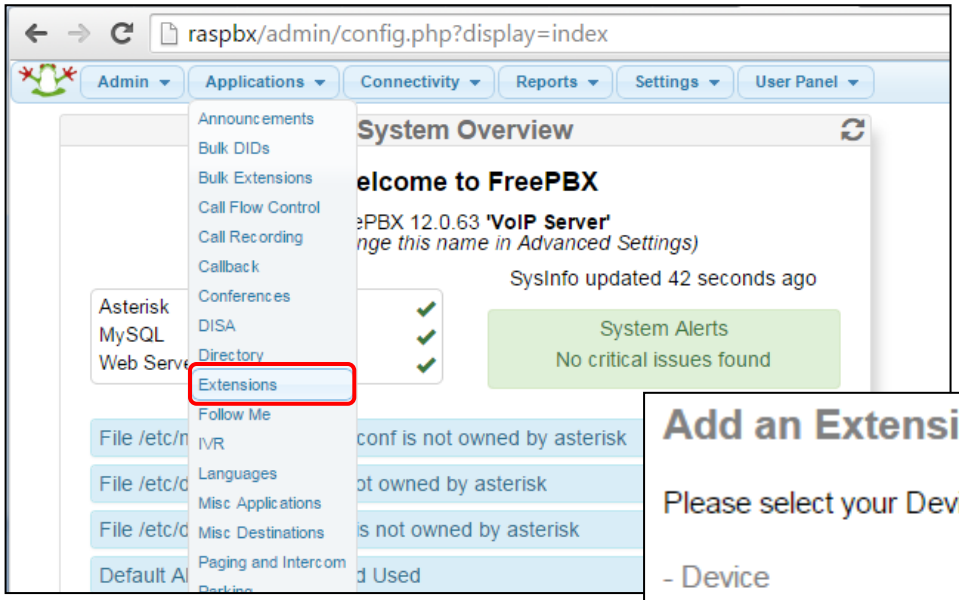
Business Media Phones: Polycom VVX® 300, Polycom VVX® 310, Polycom VVX® 400, Polycom VVX® 410, Polycom VVX® 500, Polycom VVX® 600, Polycom VVX® 1500, Polycom VVX® 1500 D
SoundStructure: Polycom SoundStructure® VoIP Interface Plug-in Card

Add User (extension) to PBX

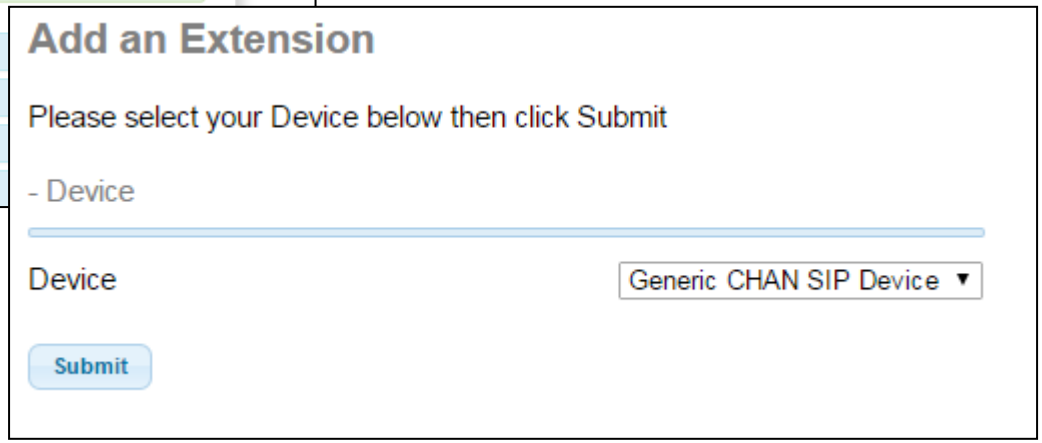
Adding New Extension (user) on PBX

FYI only

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



raspbx server
(Asterisk + FreePBX on Linux)



Add new SIP phone extension using FreePBX web page

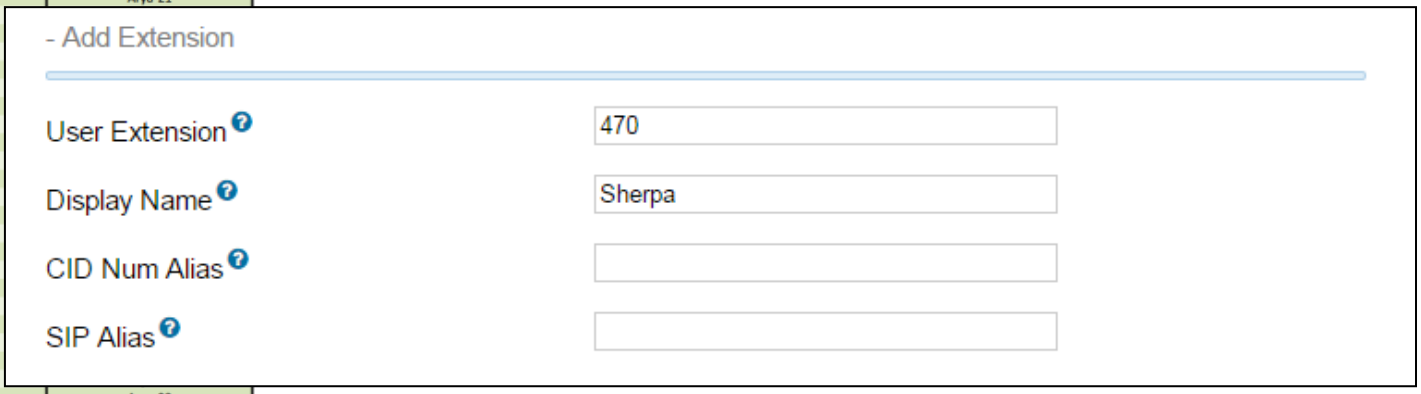
Adding New Extension (user) on PBX

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)



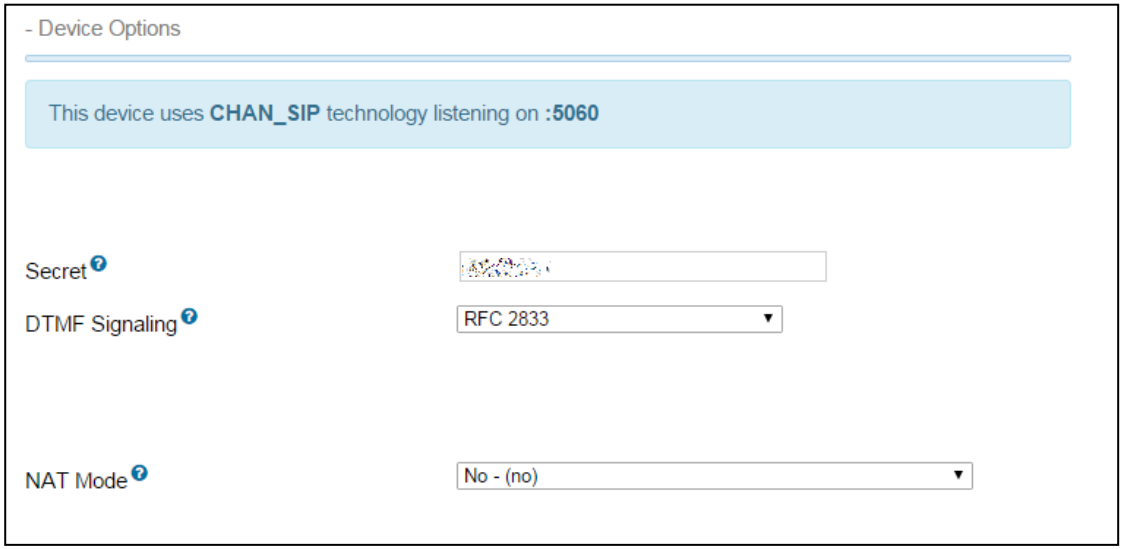
Portion of FreePBX "Add Extension" web page

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

Adding New Extension (user) on PBX

FYI only

raspbx server
(Asterisk + FreePBX on Linux)



Portion of FreePBX "Add Extension" web page

Set Secret password to use when adding handset later

Adding New Extension (user) on PBX

FYI only

raspbx server
(Asterisk + FreePBX on Linux)

- Voicemail

Status	Enabled
Voicemail Password	12345
Require From Same Extension	yes / no
Email Address	watshe90@opus.cis.cabrillo.edu
Pager Email Address	watshe90@opus.cis.cabrillo.edu
Email Attachment	yes / no
Play CID	yes / no
Play Envelope	yes / no
Delete Voicemail	yes / no

Portion of FreePBX "Add Extension" web page

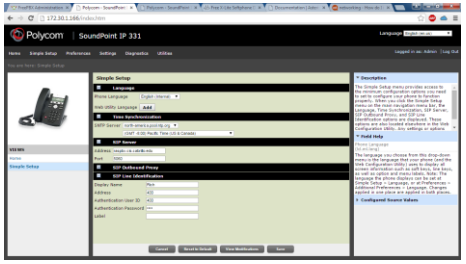
Configure voicemail and use Opus email address

Add SIP Hard Phone to Network

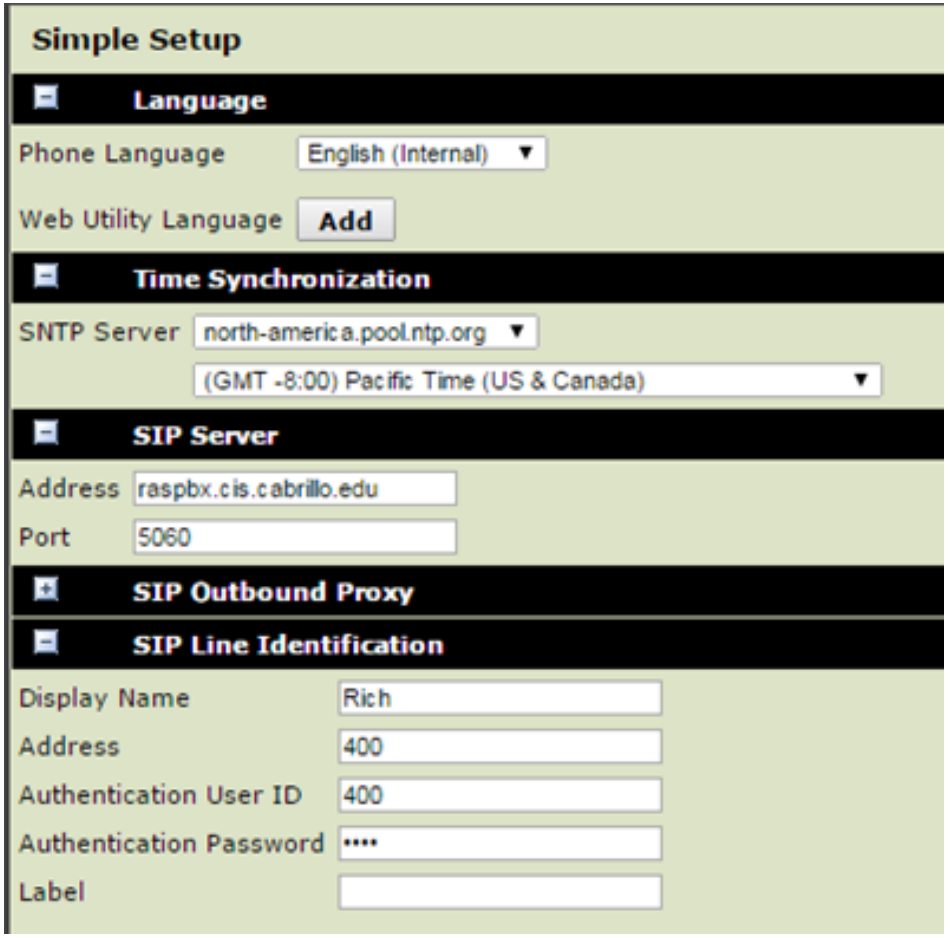
Configure SIP "Hard" Phone as extension

FYI only

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



SIP phone
is connected using standard LAN cable

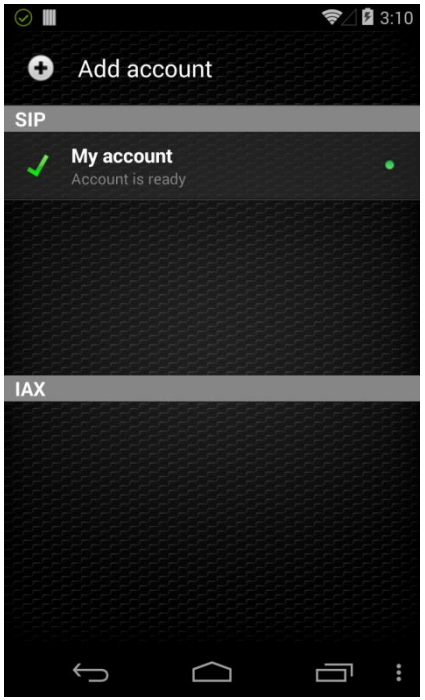


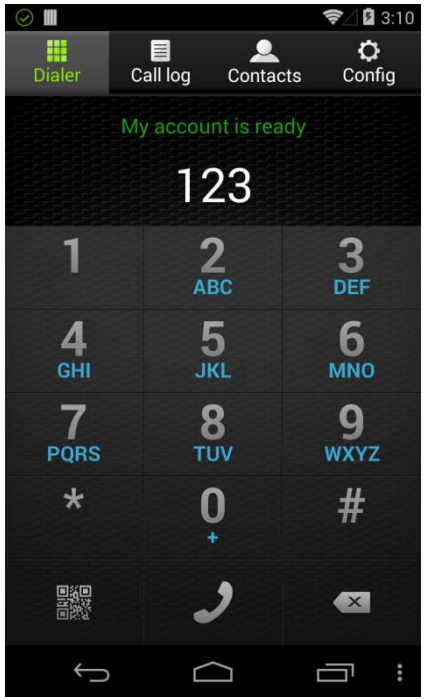
Configure SIP phone with extension number and address of PBX server

Install SIP Soft Phone on Android

Zoiper

http://www.zoiper.com/



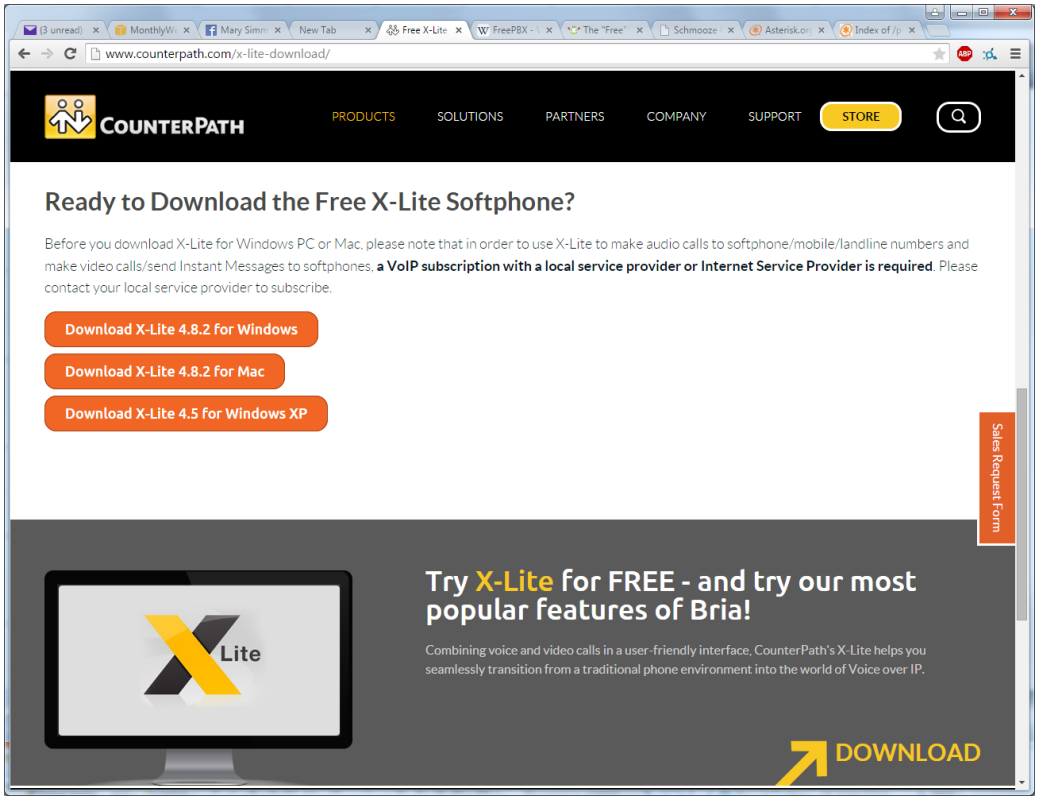


Lets you use your Android device as an phone extension

Install SIP Soft Phone on PC

X-Lite soft phone

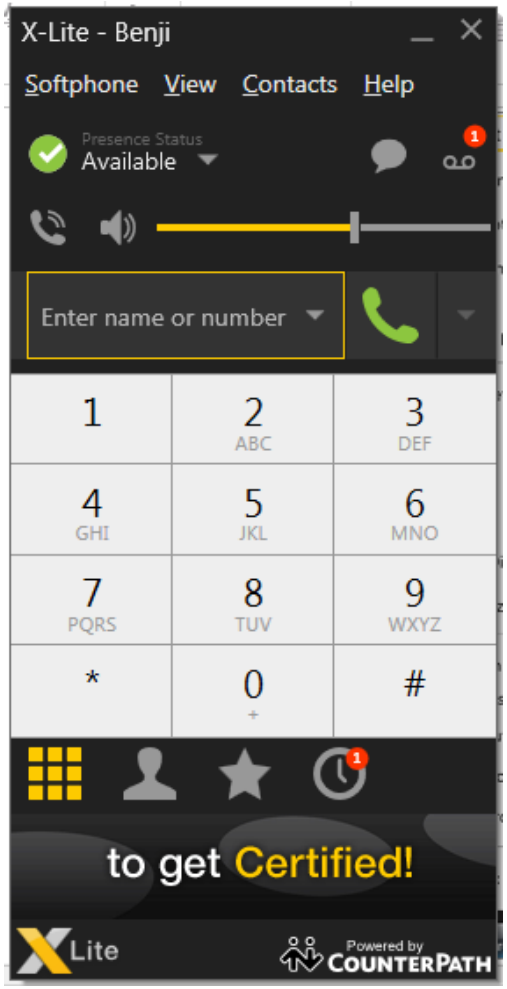
http://www.counterpath.com/x-lite-download/



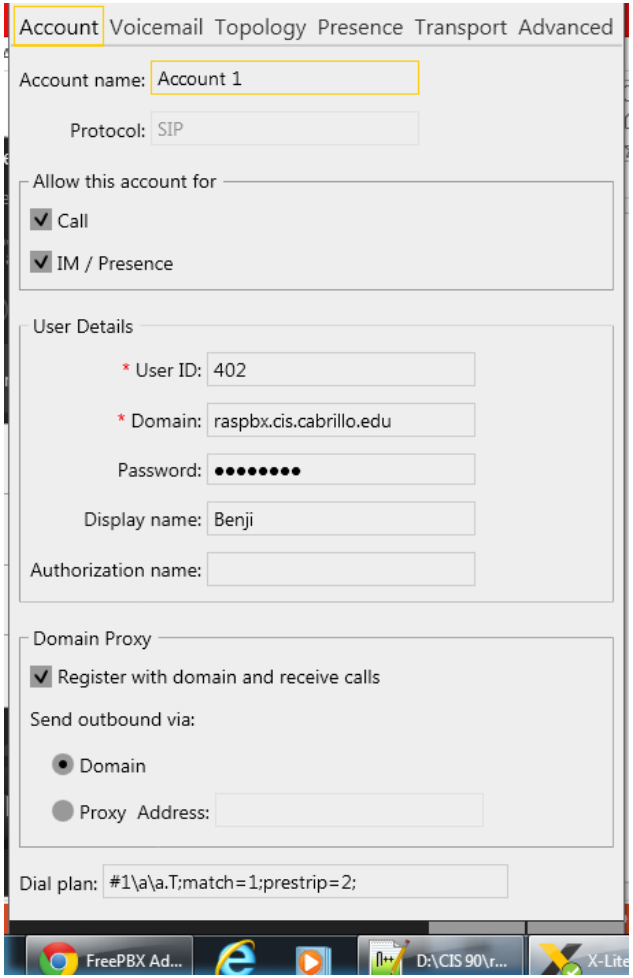
Lets you use your PC as an phone extension

Configure soft phone as extension

FYI only



Softphone > Account Settings

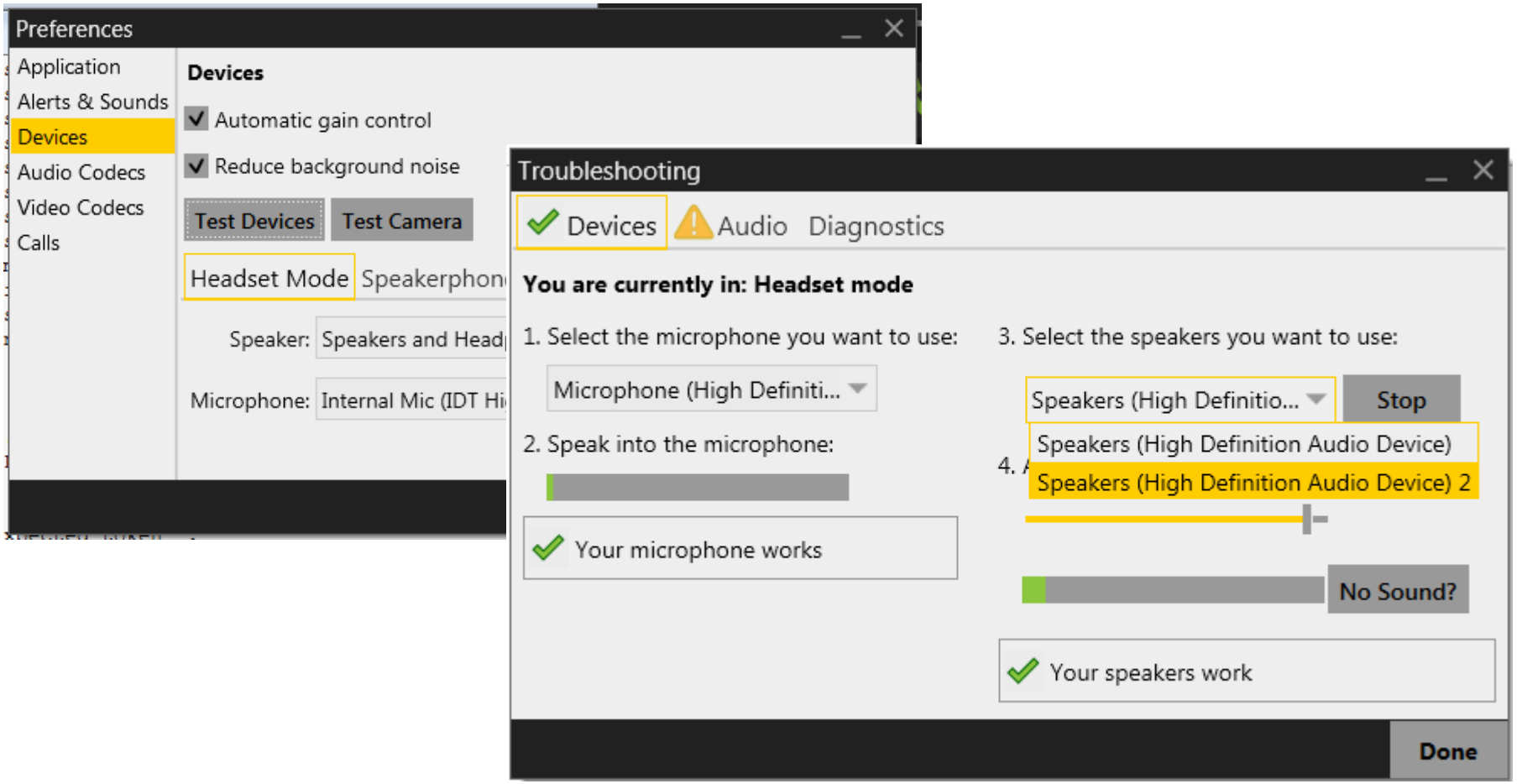


Configure soft phone with extension number and address of PBX server

Configure soft phone as extension

FYI only

Softphone > Preferences > Devices > [Test Devices]

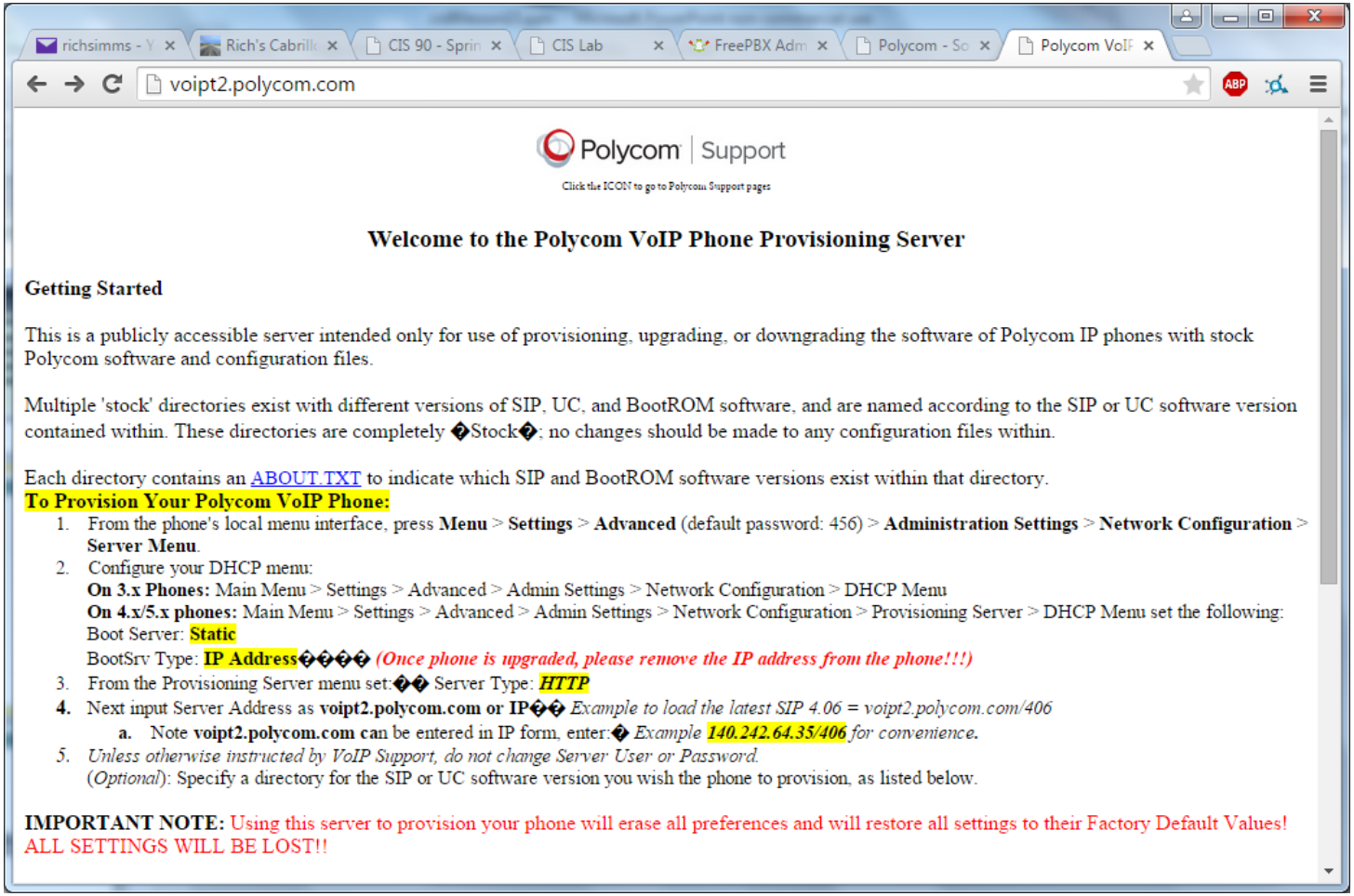


Configure soft phone audio to use computer headset

Troubleshooting

How to reset used Polycom phone to factory defaults

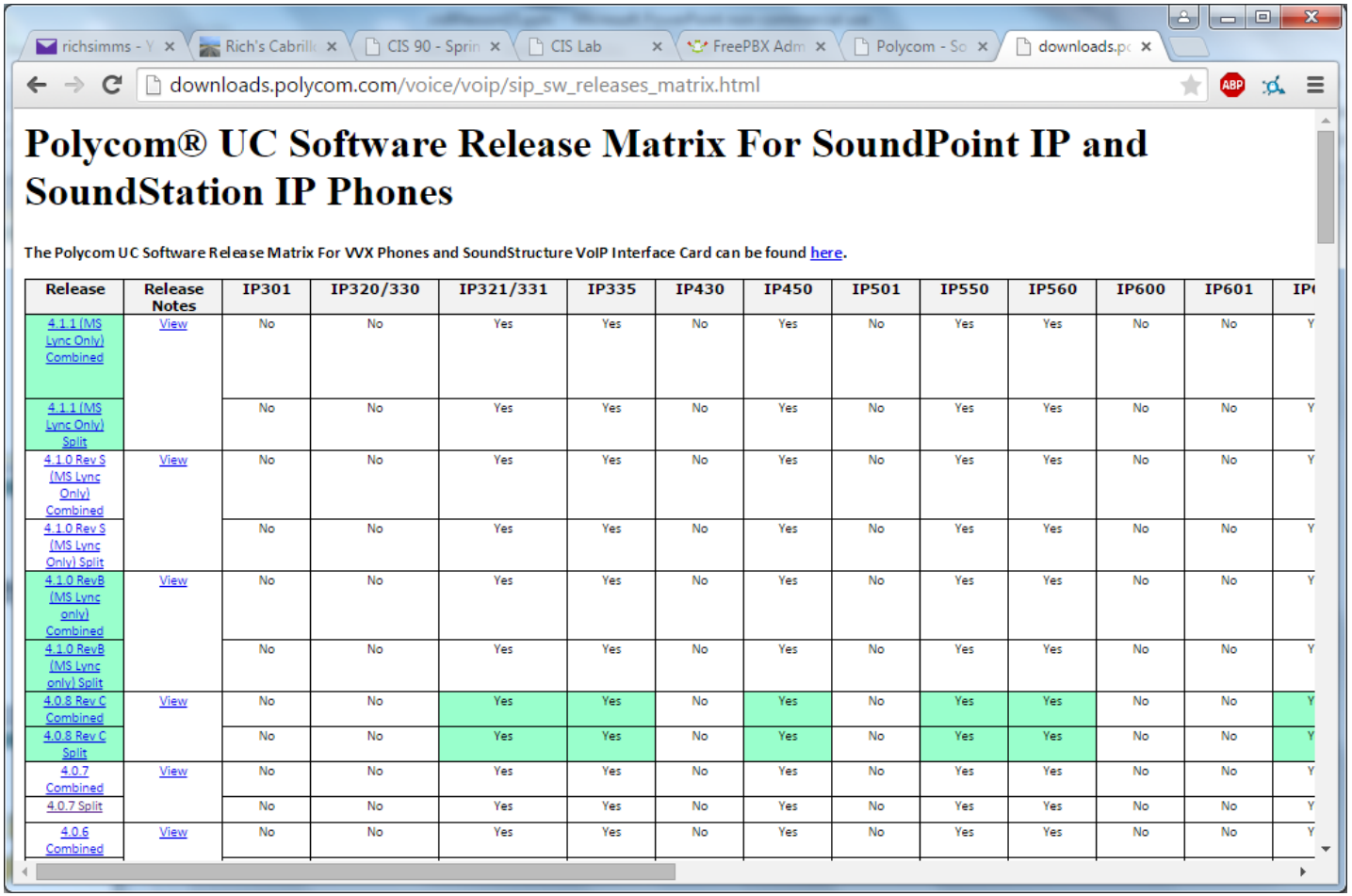
FYI only



Used phones may have previous configuration on them

How to reset used Polycom phone to factory defaults

FYI only



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 VVX 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	IP
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 RevB (MS Lync only) Combined	View	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Y
4.1.0 RevB (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

Freepbx "tampered" error fix

```
amportal chown
amportal a ma refreshsignatures
amportal a reload
```

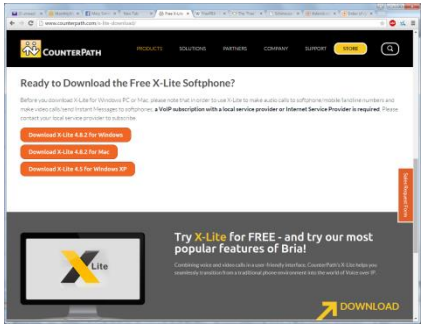
Updates digital signatures after upgrading modules

Miscellaneous

Student Volunteer Checklist

FYI only

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

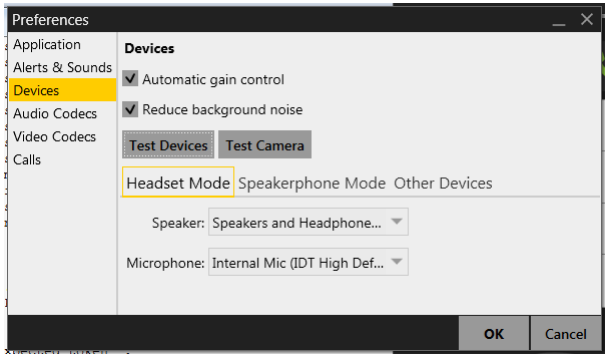


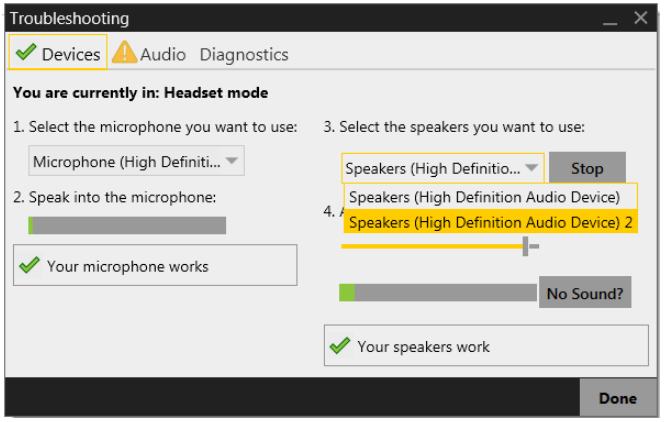
http://www.counterpath.com/x-lite-download/

Download X-Lite 4.8.2 for Windows

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

Softphone > Preferences > Devices > [Test Devices]





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 = 172.30.1.34
   b) poly-01 = 172.30.1.36
   c) poly-02 = 172.30.1.37
4. Delete all current extensions on PBX
5. Add Rich as x400 for Poly-01 hard phone
6. Add Benji as x412 for Poly-02 hard phone
7. Add Smartphone as x402 for Zoiper soft phone
8. Test x400 <-> x412 <-> 402
   a) Voice session
   b) Voicemail
9. Test voice mail. From phone dial own extension and hit * to enter voice mail. Check for email on each recorded message.

```
NoPar#show ip dhcp binding

ip dhcp pool raspbx-828-wifi
 host 172.30.1.34 255.255.255.0
 client-identifier 01ec.1a59.d62c.c0
!
ip dhcp pool poly-01
 host 172.30.1.36 255.255.255.0
 hardware-address 0004.f224.2960
!
ip dhcp pool poly-02
 host 172.30.1.37 255.255.255.0
 hardware-address 0004.f224.78d7
!
ip dhcp pool volumio
 host 172.30.1.38 255.255.255.0
 hardware-address 40a5.ef09.ae53
 hardware-address b827.ebcf.c47e (eth0)
```

Poly-01: 00:04:F2:24:29:60
Poly-02: 00:04:F2:24:78:D7
Raspbx-828 eth0: B8:27:EB:78:79:7D
Raspbx-828-wifi wlan0: EC:1A:59:D6:2C:C0

Volumio eth0: b8:27:eb:cf:c4:7e
Volumio wlan0: 40:a5:ef:09:ae:53

MACs and IPs

FYI only

Poly-01: 00:04:F2:24:29:60
Poly-02: 00:04:F2:24:78:D7
Raspbx-828 eth0: B8:27:EB:78:79:7D
Raspbx-828-wifi wlan0: EC:1A:59:D6:2C:C0

Volumio eth0: b8:27:eb:cf:c4:7e
Volumio wlan0: 40:a5:ef:09:ae:53

```
NoPar#sh ip dhcp binding
Bindings from all pools not associated with VRF:
IP address          Client-ID/              Lease expiration        Type
                    Hardware address/
                    User name
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

To clear an IP address if reservation fails:
clear ip dhcp binding 172.30.1.165

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                       Cabri11o                          from-internal    Yes  No
402                       Cabri11o                          from-internal    Yes  No
407                       Cabri11o                          from-internal    Yes  No
446                       Cabri11o                          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