Rich's CCC Confer checklist - setup

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

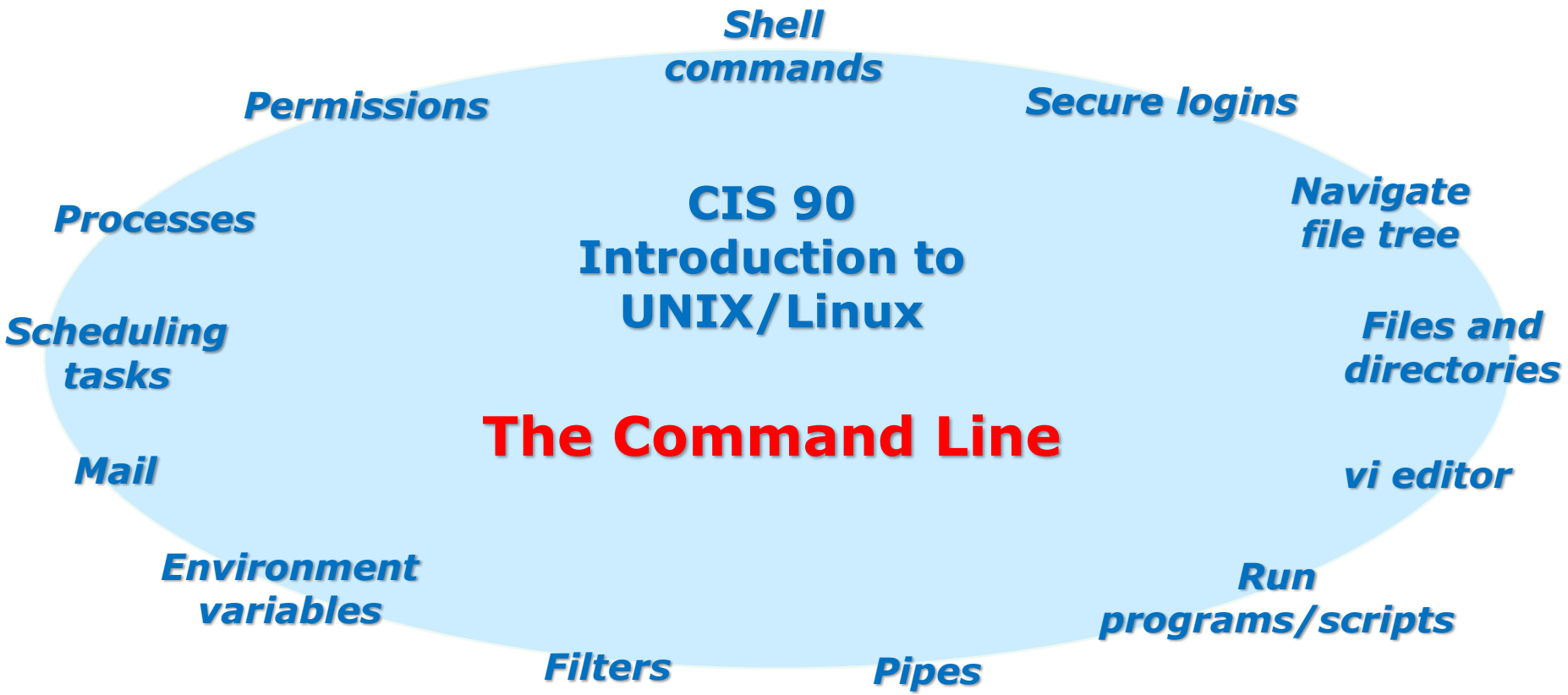
- ❑ Flash cards
- ❑ Page numbers
- ❑ 1st minute quiz
- ❑ Web Calendar summary
- ❑ Web book pages
- ❑ Commands

- ❑ Bring some Linux ISOs on flash 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 12/6/2017



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.

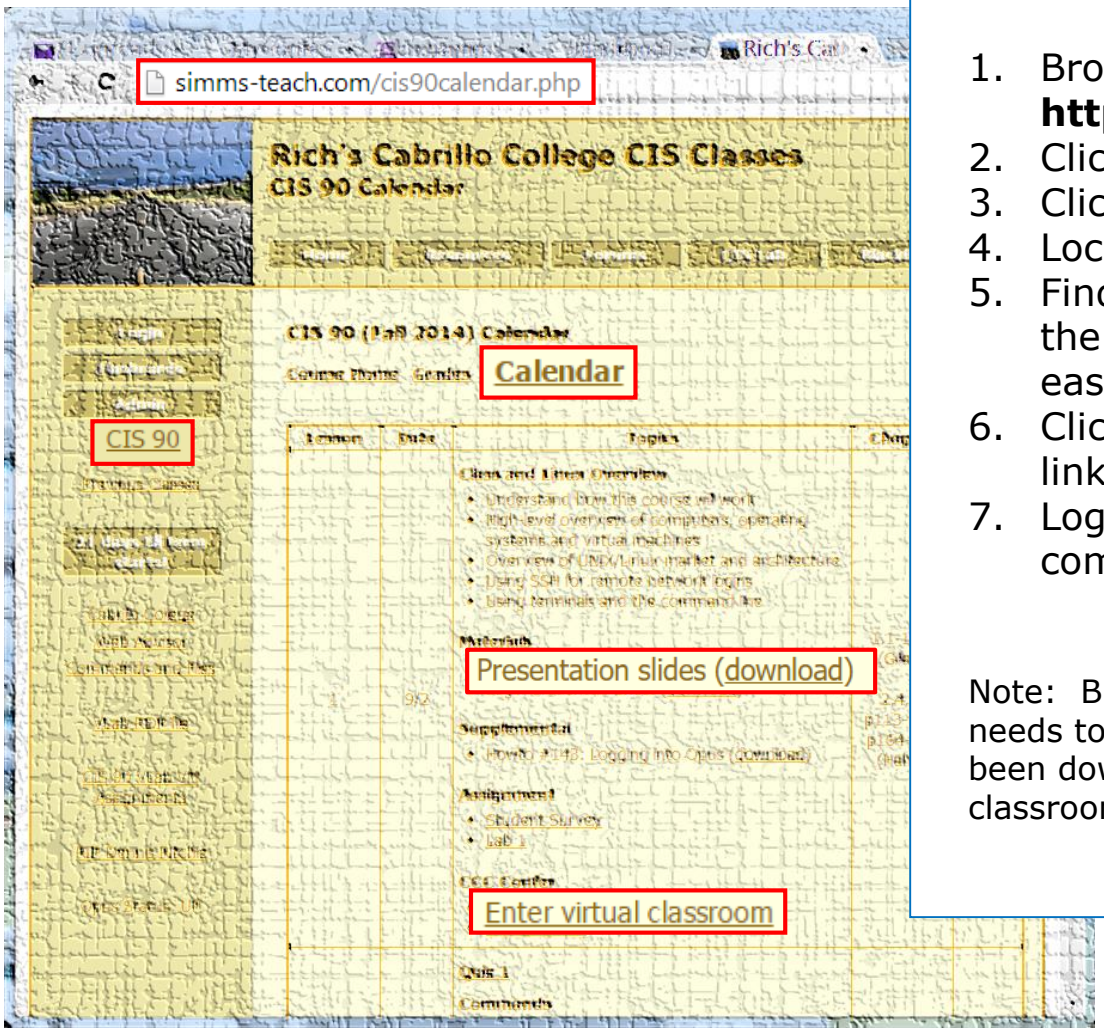
Introductions and Credits

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

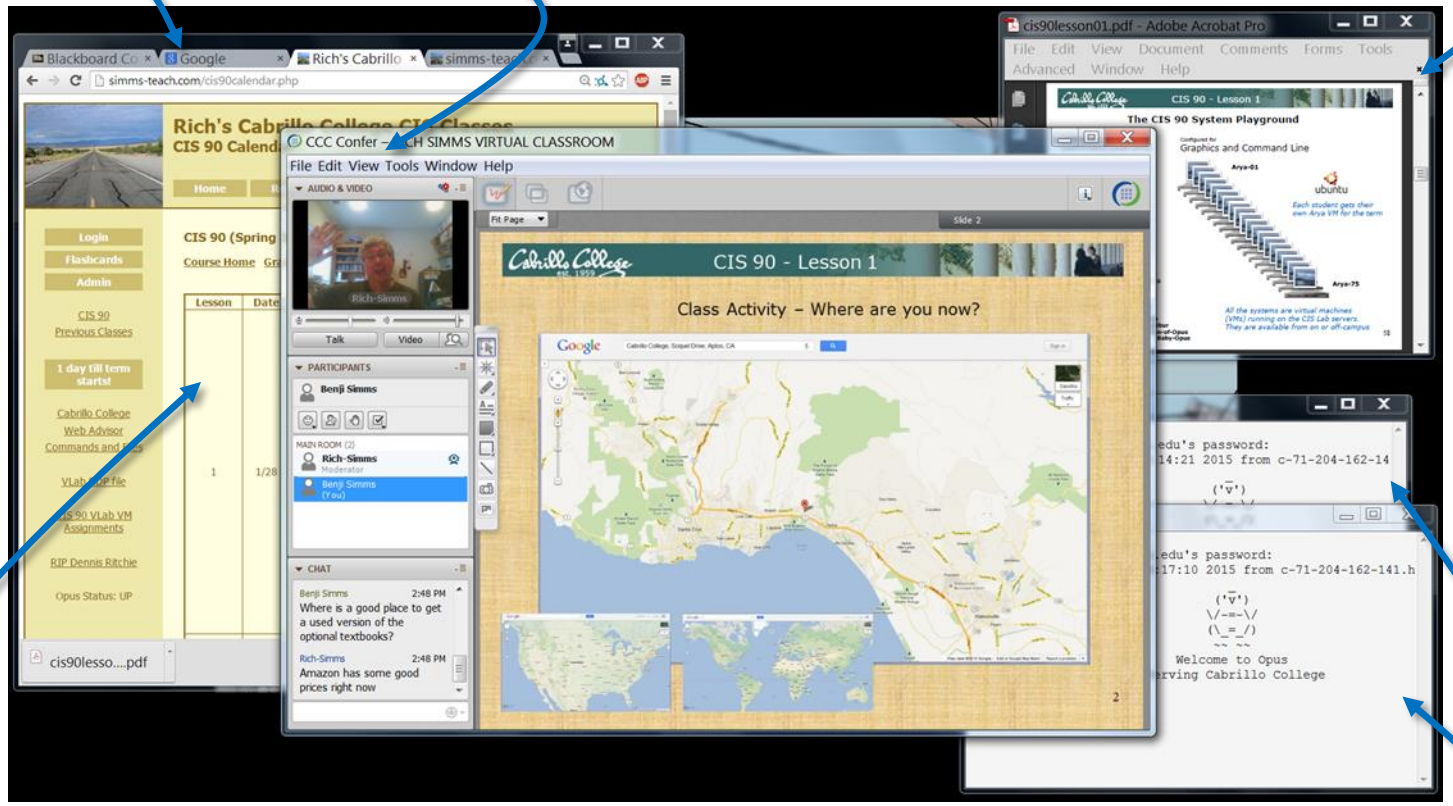


1. Browse to: **http://simms-teach.com**
2. Click the **CIS 90** link.
3. Click the **Calendar** link.
4. Locate today's lesson.
5. Find the **Presentation slides** for the lesson and **download** for easier viewing.
6. Click the **Enter virtual classroom** link to join CCC Confer.
7. Log into Opus-II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

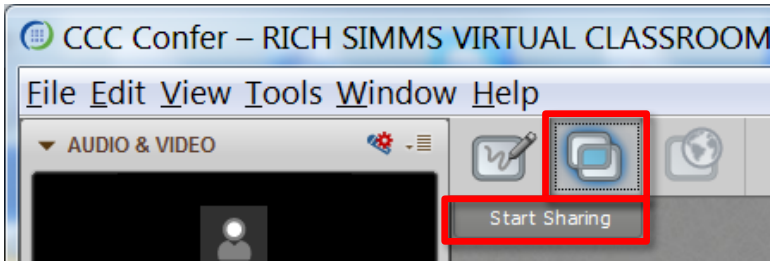
- ❑ *Google*
- ❑ *CCC Confer*
- ❑ *Downloaded PDF of Lesson Slides*



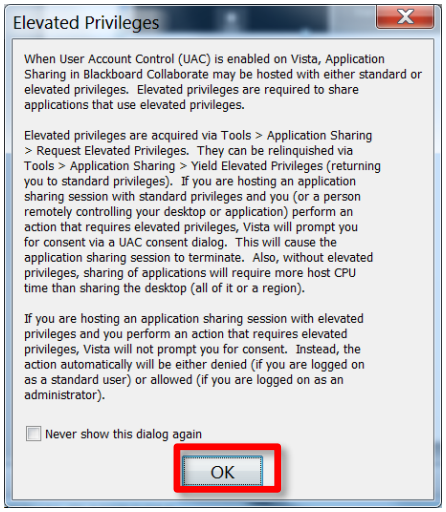
- ❑ *CIS 90 website Calendar page*
- ❑ *One or more login sessions to Opus-II*

Student checklist for sharing desktop with classmates

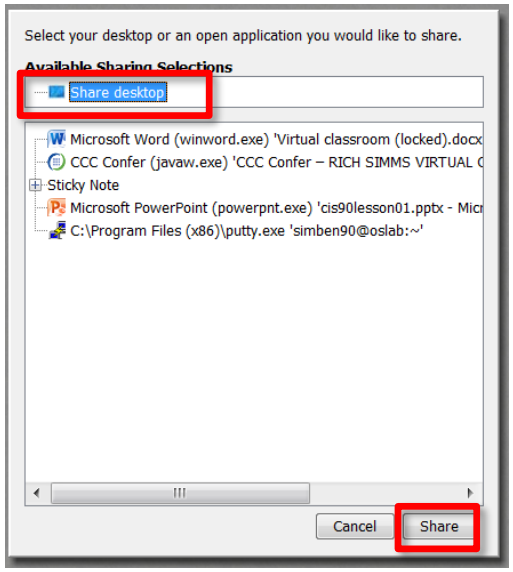
1) Instructor gives you sharing privileges



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



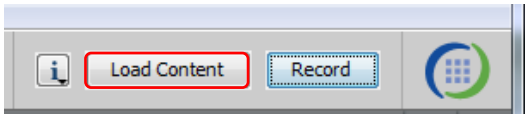
3) Click OK button.



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

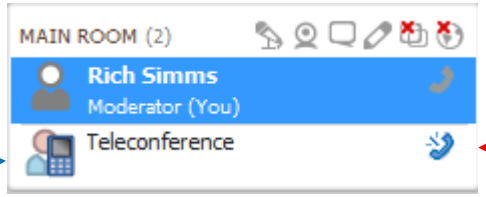
Rich's CCC Confer checklist - setup

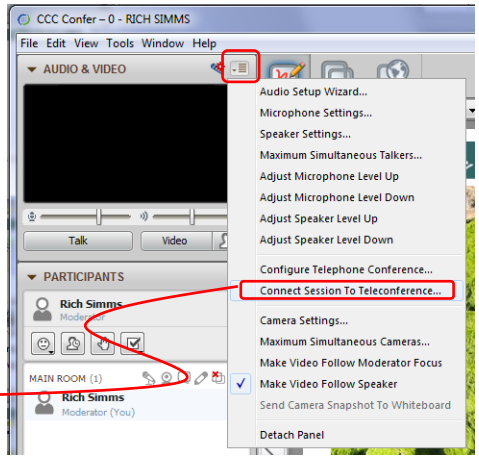
[ ] Preload White Board



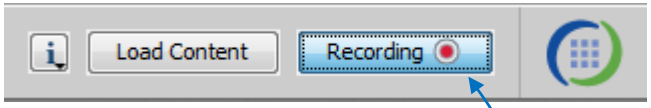
[ ] Connect session to Teleconference

Session now connected to teleconference





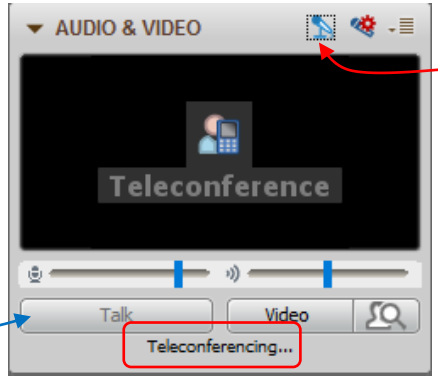
[ ] Is recording on?



Red dot means recording

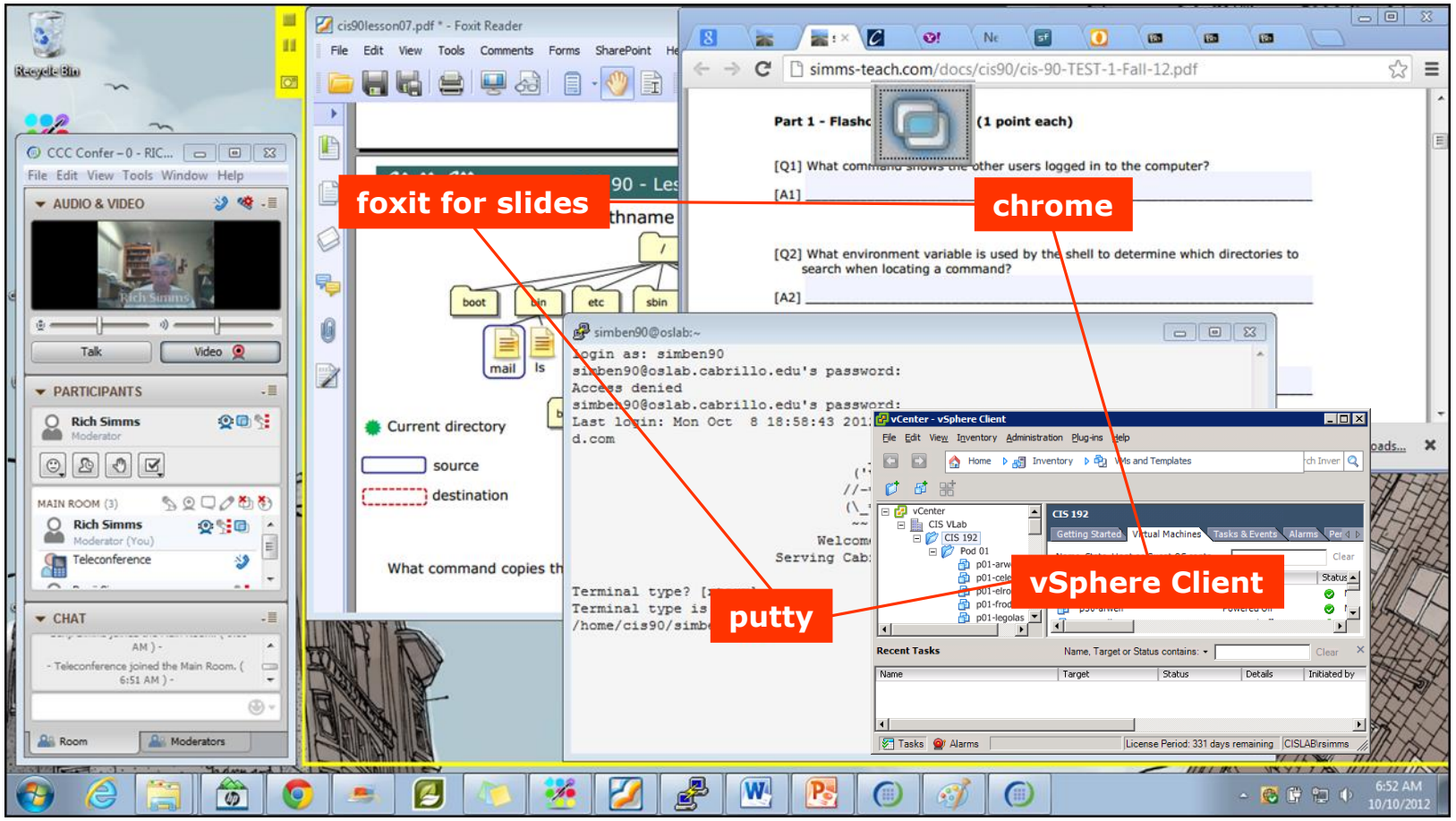
[ ] Use teleconferencing, not mic

Should be grayed out



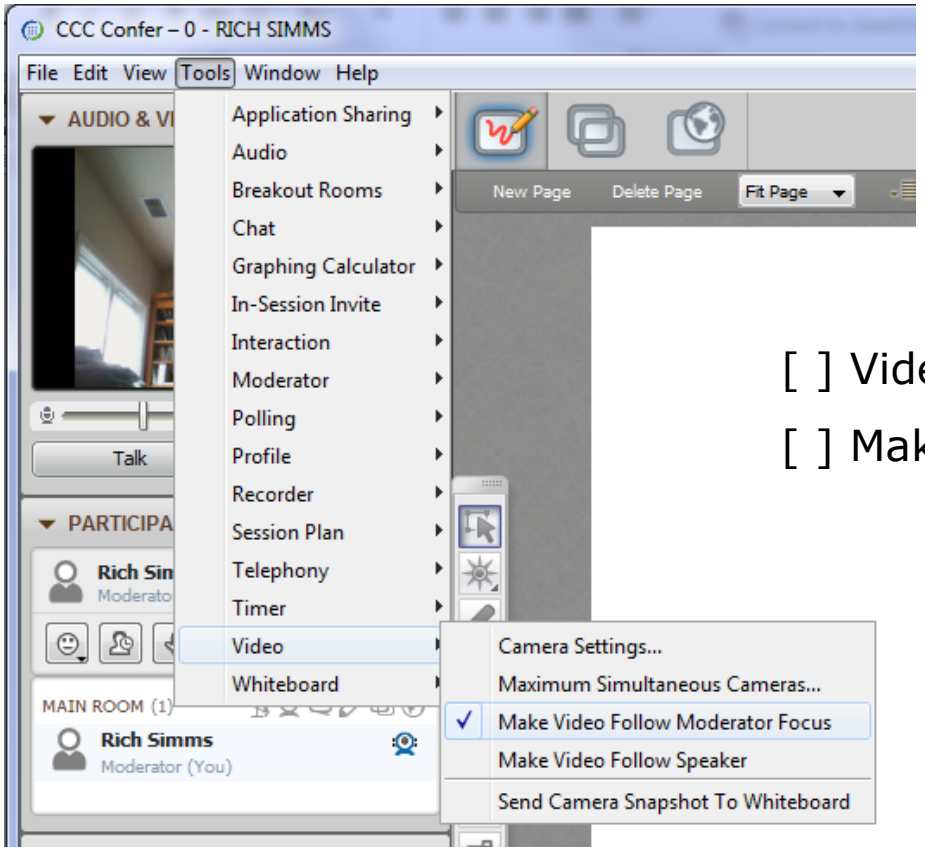
Should change from phone handset icon to little Microphone icon and the Teleconferencing … message displayed

Rich's CCC Confer checklist - screen layout



[ ] layout and share apps

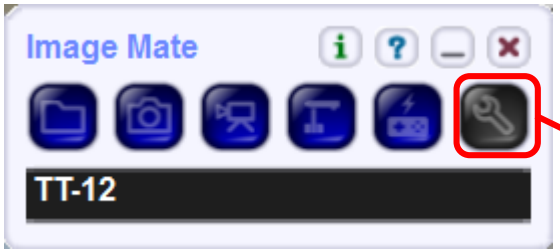
Rich's CCC Confer checklist - webcam setup

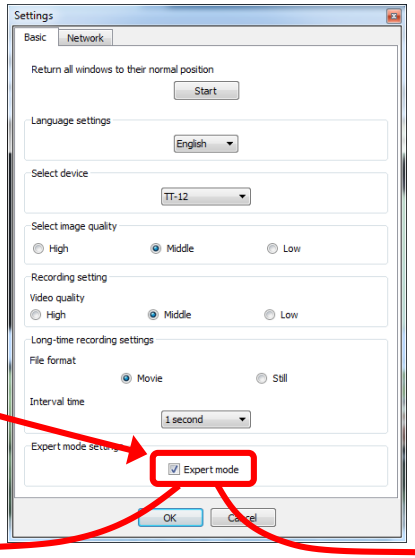


[ ] Video (webcam)

[ ] Make Video Follow Moderator Focus

Rich's CCC Confer checklist - Elmo



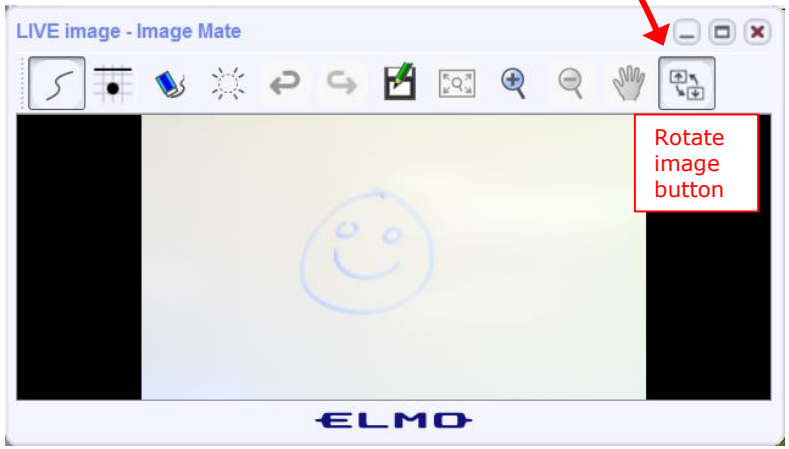


The "rotate image" button is necessary if you use both the side table and the white board.

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



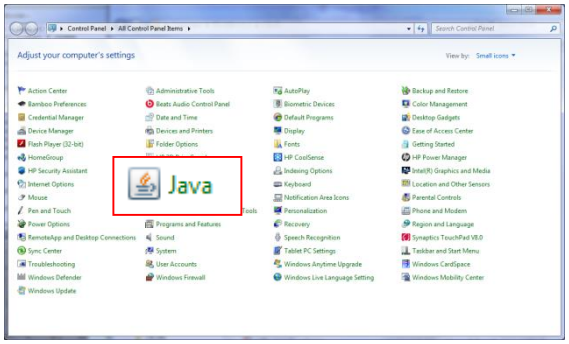
Run and share the Image Mate program just as you would any other app with CCC Confer

Rich's CCC Confer checklist - universal fixes

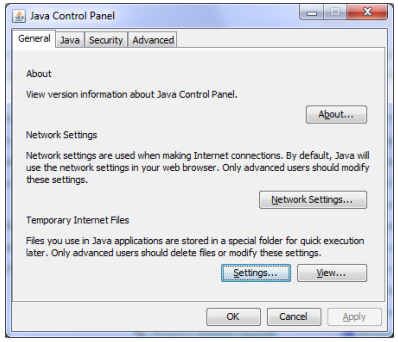
Universal Fix for CCC Confer:

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

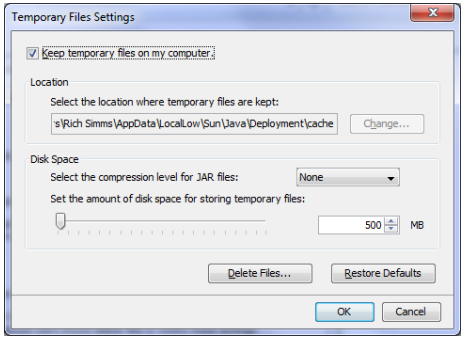
Control Panel (small icons)



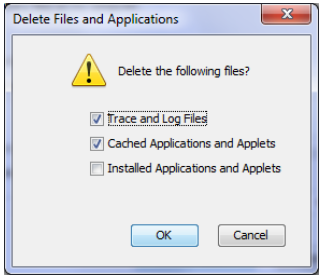
General Tab > Settings…



500MB cache size

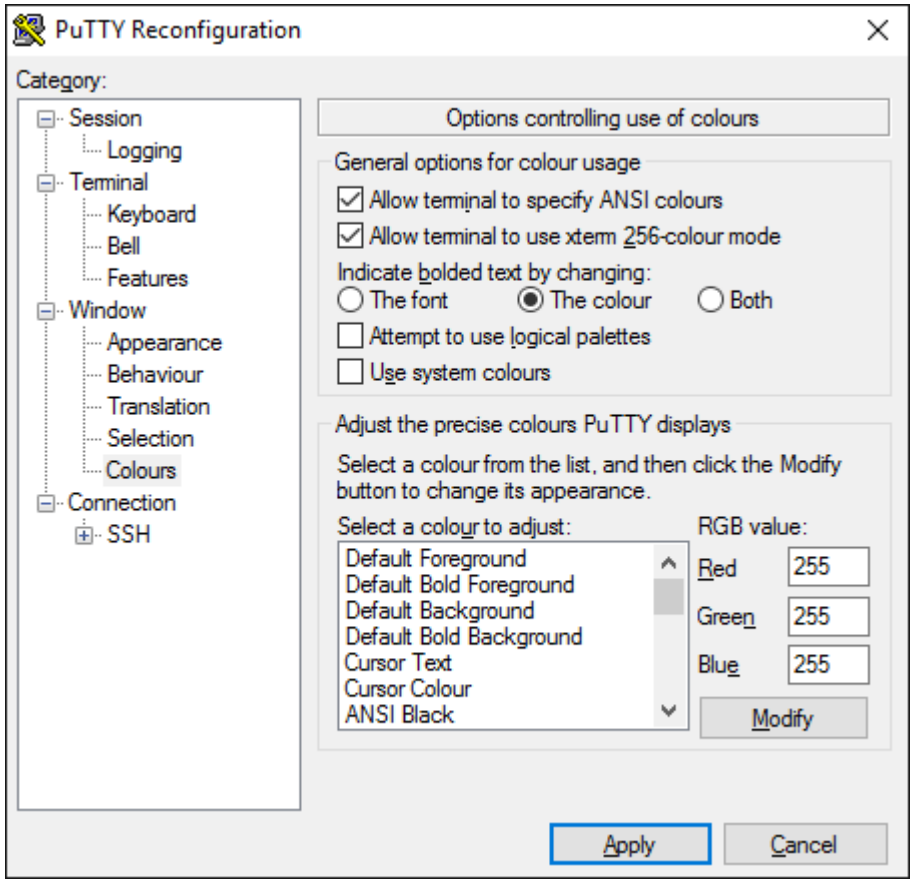


Delete these



Google Java download

Rich's CCC Confer checklist - Putty Colors



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

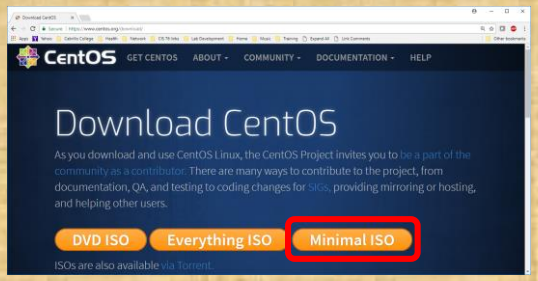
Putty Colors

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

Before class starts activity

To save time download a CentOS Minimal ISO from:

https://www.centos.org/download/



To save even more time download and install VirtualBox from:

https://www.virtualbox.org/wiki/Downloads

Start

Sound Check

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

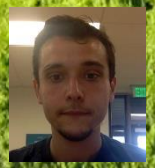
*Instructor can use *96 to mute all student lines.*

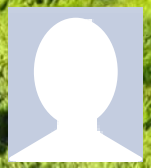
Volume
**4 - increase conference volume.*
**7 - decrease conference volume.*
**5 - increase your voice volume.*
**8 - decrease your voice volume.*

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

Marvin

William

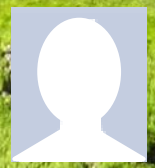

Vinny


Hayden

Nick

Ramon

Nicholas


Manuel

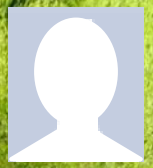
Oscar

Daniel P.

Jason

Brian

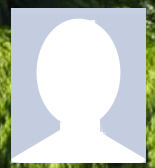
Vincent


Kyle

Sam

Jacobs

Emmanuel


Sean

Alejandro

Moises

Joseph

David

Ben

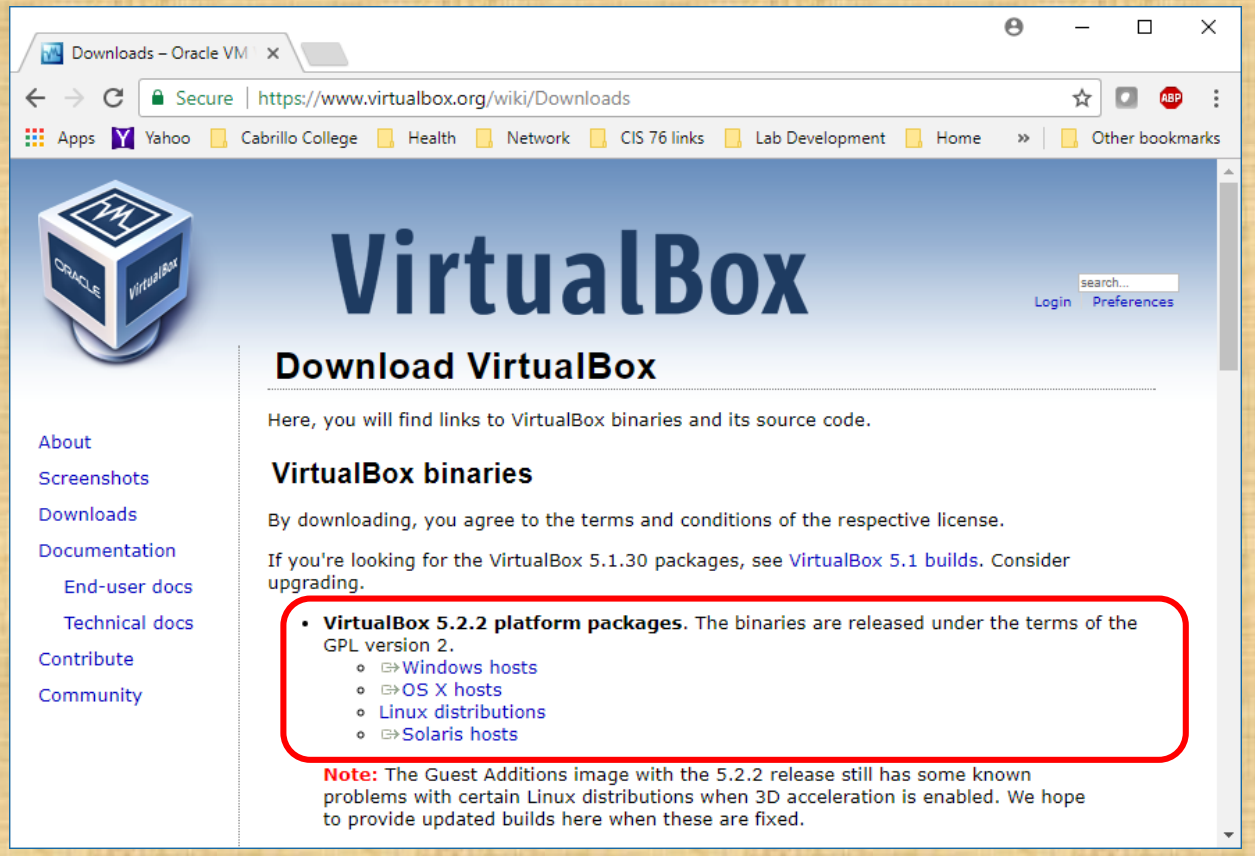
Email me (risimms@cabrillo.edu) a relatively current photo of your face for 3 points extra credit

Quiz

No Quiz Today !

Activity

1. Google "virtualbox download"
2. Download and install VirtualBox



Activity

1. Google "centos download"
2. Download a Minimal CentOS ISO to the second hard drive.

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-II • 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!

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

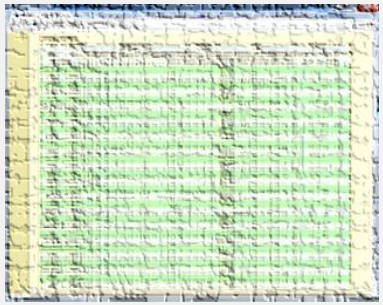
```
/home/cis90/simben/bin $ cp myscript myscript.v3
```

Where to find your grades

Send me your survey to get your LOR code name.

The CIS 90 website Grades page

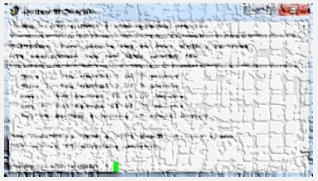
http://simms-teach.com/cis90grades.php



Or check on Opus-II

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 December 11th 1-3:50PM

Mon	12/11	**Test #3 (the final exam)** **Time** • MONDAY 1:00PM - 3:50PM 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 3:50PM.
- 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)

FALL 2017 FINAL EXAMINATIONS SCHEDULE
DECEMBER 11 TO DECEMBER 16

DAYTIME FINAL SCHEDULE

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 the 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	Monday, December 11
9:00 am and 10:15 am, MW/Daily	7:00 am-9:50 am	Wednesday, December 13
10:20 am and 11:35 am, MW/Daily	10:00 am-12:50 pm	Monday, December 11
11:40 am and 12:55 pm, MW/Daily	10:00 am-12:50 pm	Wednesday, December 13
1:00 pm and 2:15 pm, MW/Daily	1:00 pm-3:50 pm	Monday, December 11
2:20 pm and 3:35 pm, MW/Daily	1:00 pm-3:50 pm	Wednesday, December 13
3:40 pm and 5:30 pm, MW/Daily	4:00 pm-6:50 pm	Monday, December 11
6:30 am and 8:55 am, TTh	7:00 am-9:50 am	
9:00 am and 10:15 am, TTh	7:00 am-9:50 am	
10:20 am and 11:35 am, TTh	10:00 am-12:50 pm	
11:40 am and 12:55 pm, TTH	10:00 am-12:50 pm	
1:00 pm and 2:15 pm, TTh	1:00 pm-3:50 pm	
2:20 pm and 3:35 pm, TTh	1:00 pm-3:50 pm	
3:40 pm and 5:30 pm, TTh	4:00 pm-6:50 pm	
Friday am	9:00 am-11:50 am	
Friday pm	1:00 pm-3:50 pm	
Saturday am	9:00 am-11:50 am	
Saturday pm	1:00 pm-3:50 pm	

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
98169	W	1:00PM-4:05PM	3.00	R.Simms	OL
&	Arr.	Arr.		R.Simms	OL

Section 98169 is an ONLINE course. Meets weekly throughout the semester online during the scheduled times by remote technology with an additional 50 min online lab per week. For details, see instructor's web page at go.cabrillo.edu/online.

98170	W	1:00PM-4:05PM	3.00	R.Simms	828
&	Arr.	Arr.		R.Simms	OL

Section 98170 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.

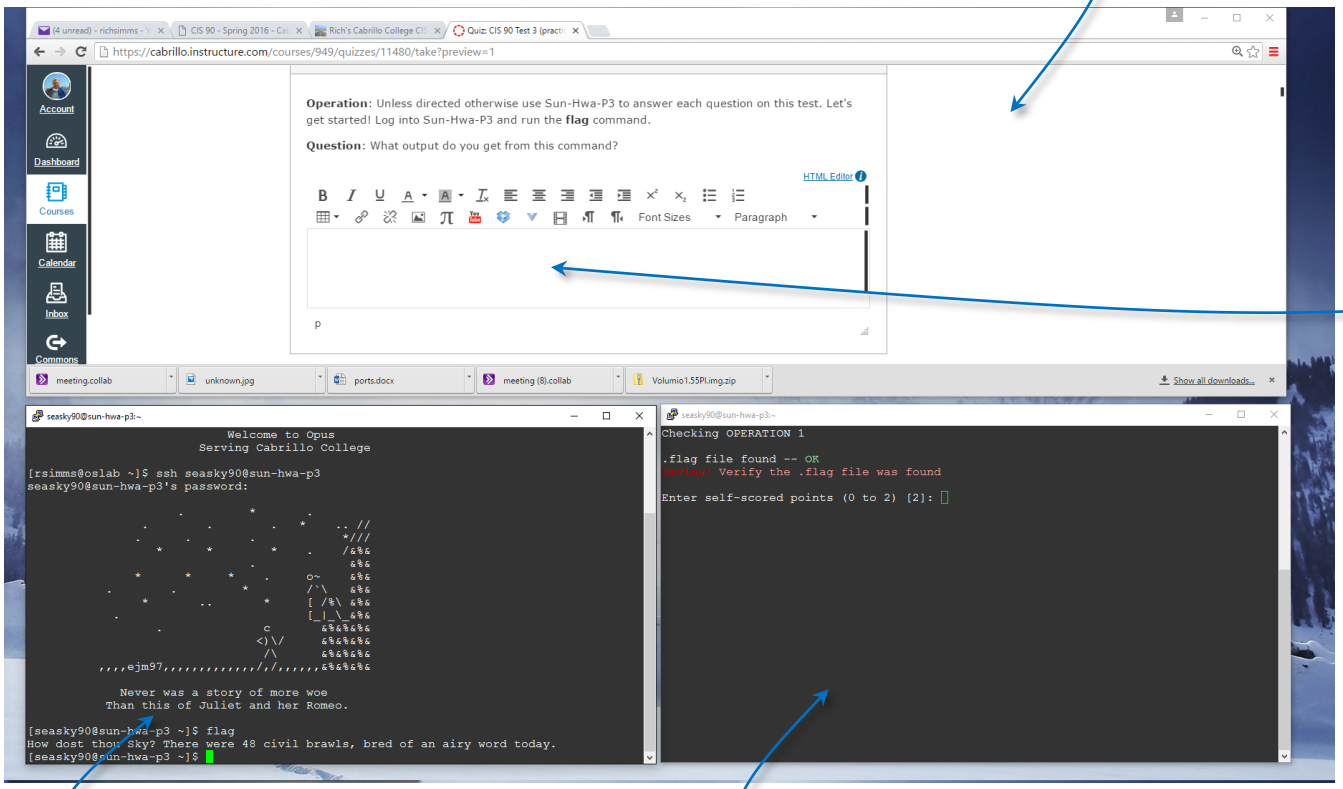
Use the restore command for a fresh start.

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
```

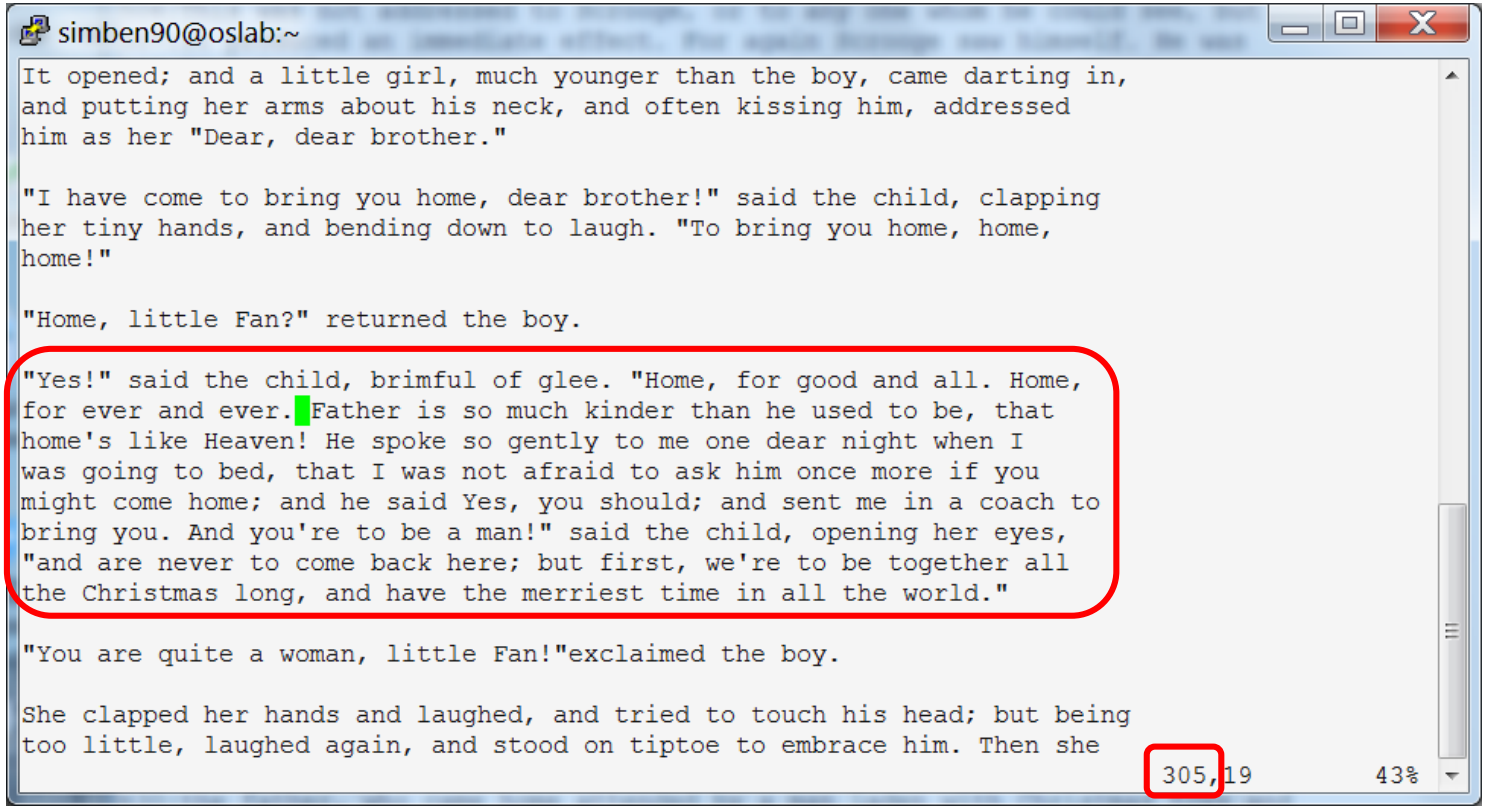
The -n option on grep shows the line number

```
/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

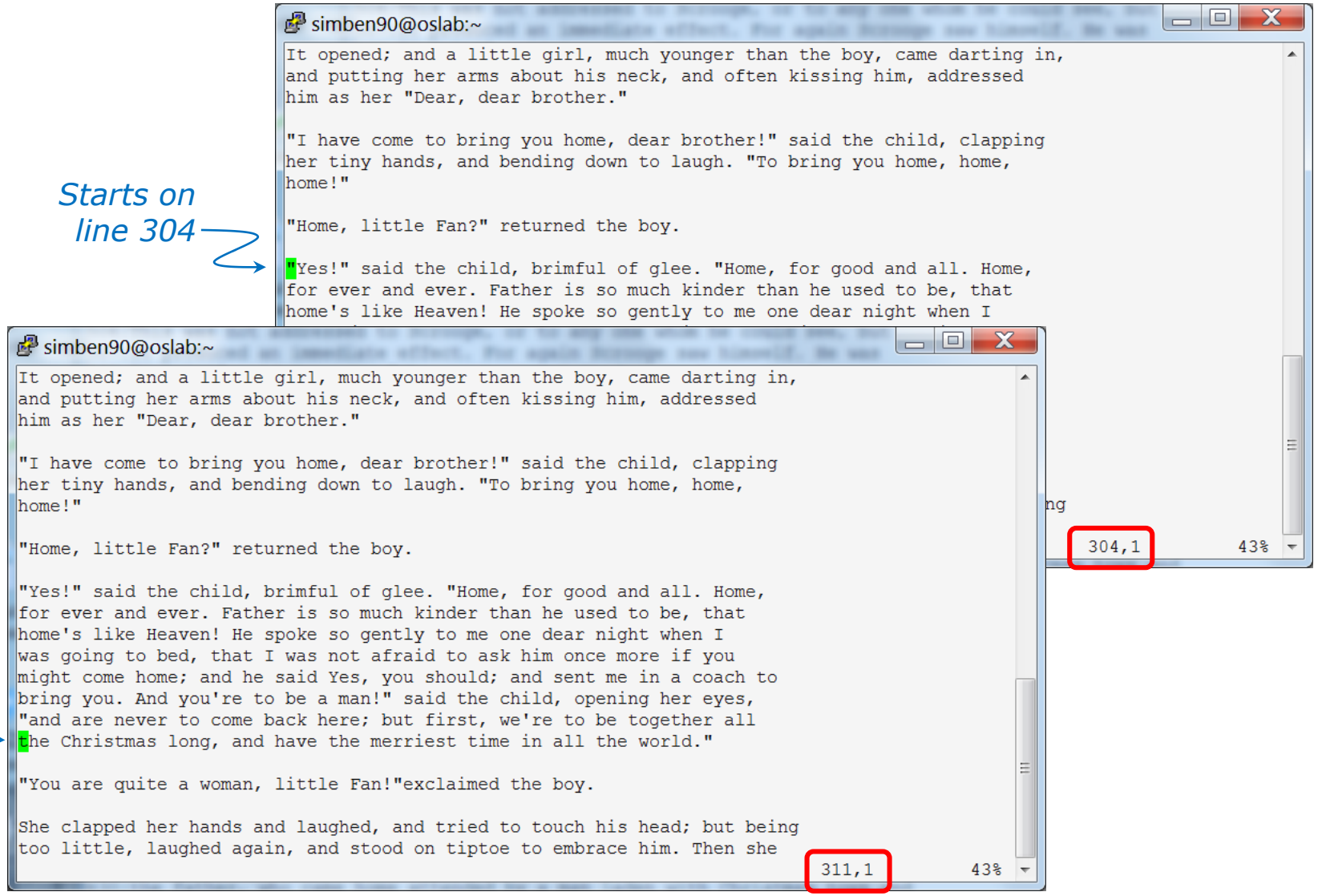
```
vi ../depot/dickens
```



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

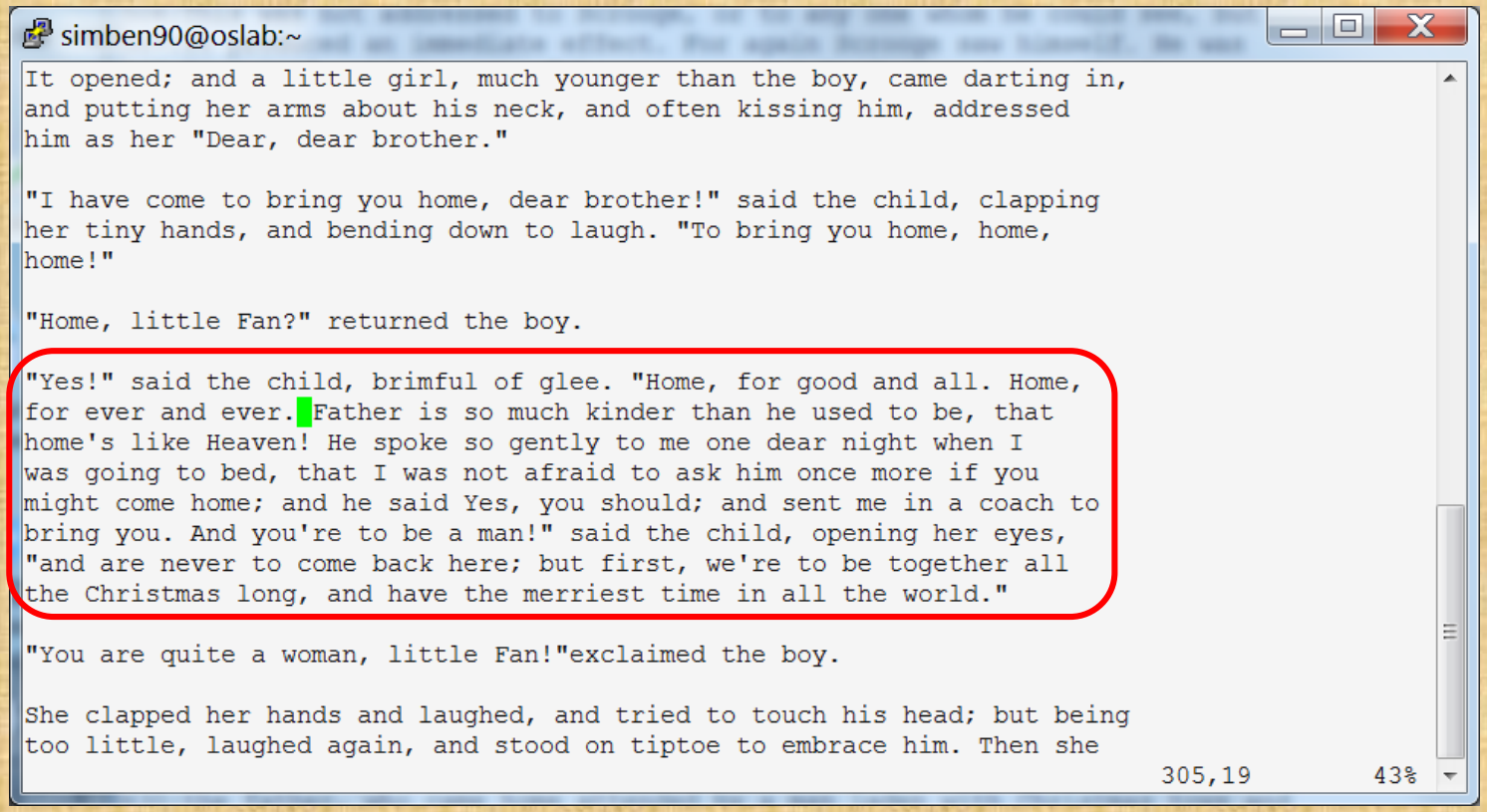
Starts on line 304

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

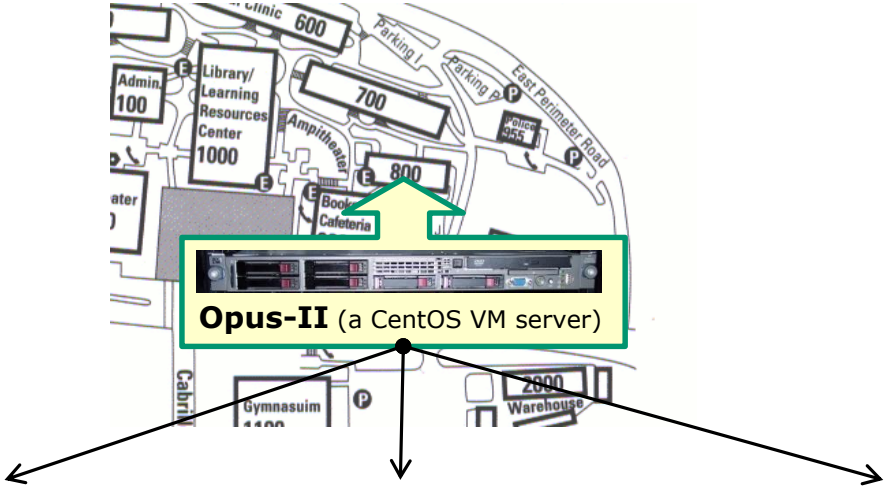
```
/home/cis90/simben $ vi dickens101
/home/cis90/simben $ cat dickens101
head -n311 ../depot/dickens | tail -n8

/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

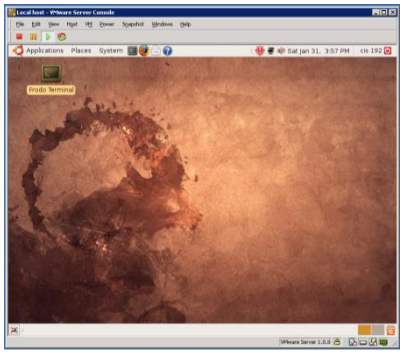
File Transfer

Downloading your Opus-II files to your home computer



Windows

Mac



Linux

First, let's backup your home directory on Opus-II

```
/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

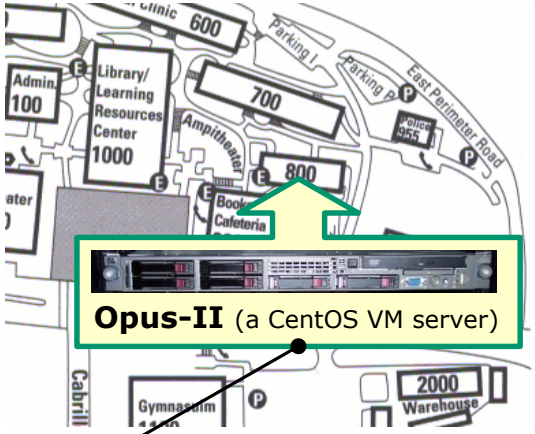
- Between Linux and Windows:
  - **Filezilla** or related applications
- Between Linux and Linux/Mac:
  - **Filezilla** or related applications
  - **scp** command

File Transfer To Windows

FileZilla

File Transfer

Downloading your Opus-II files to your home computer



Windows

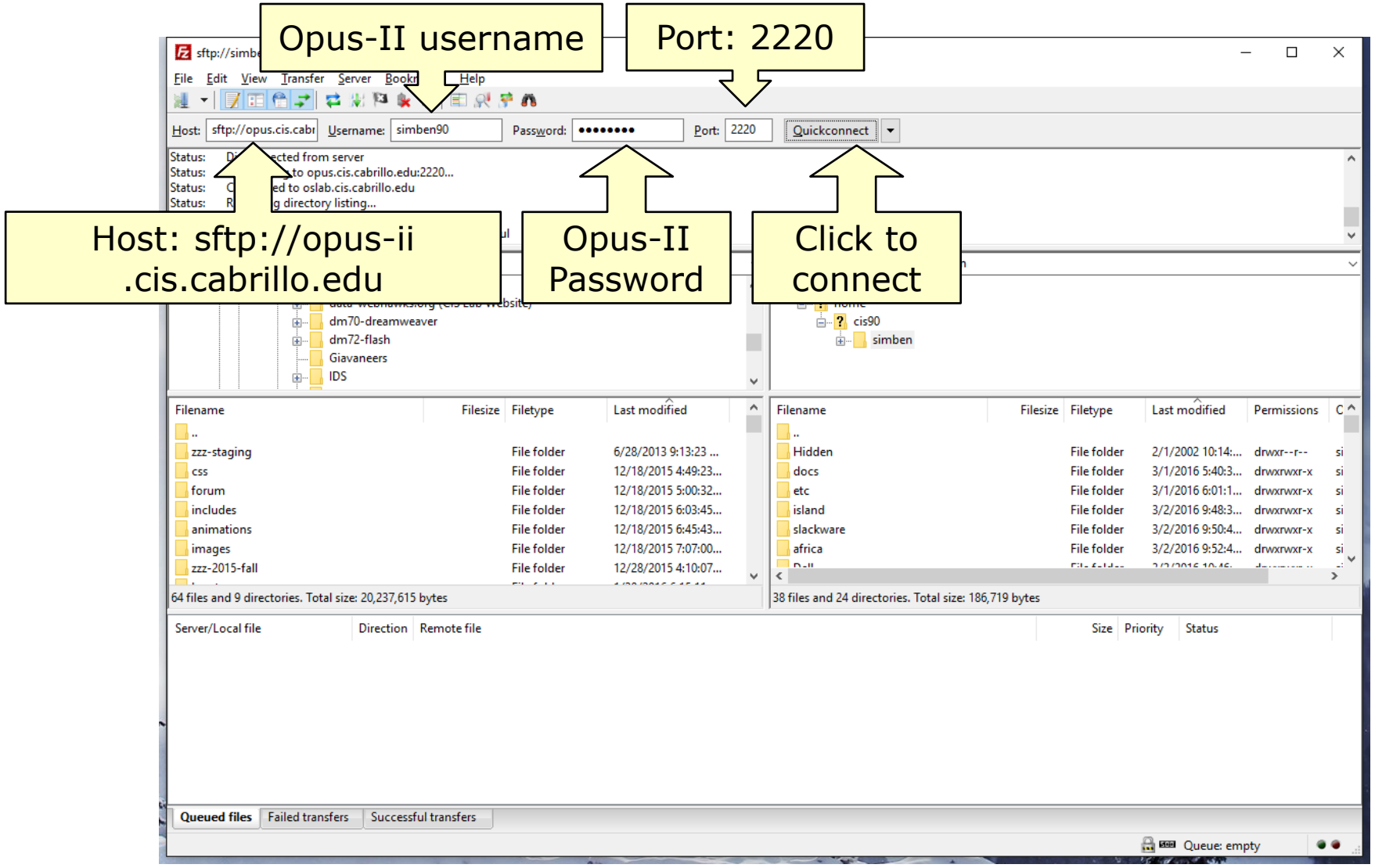
Using FileZilla

File Transfer

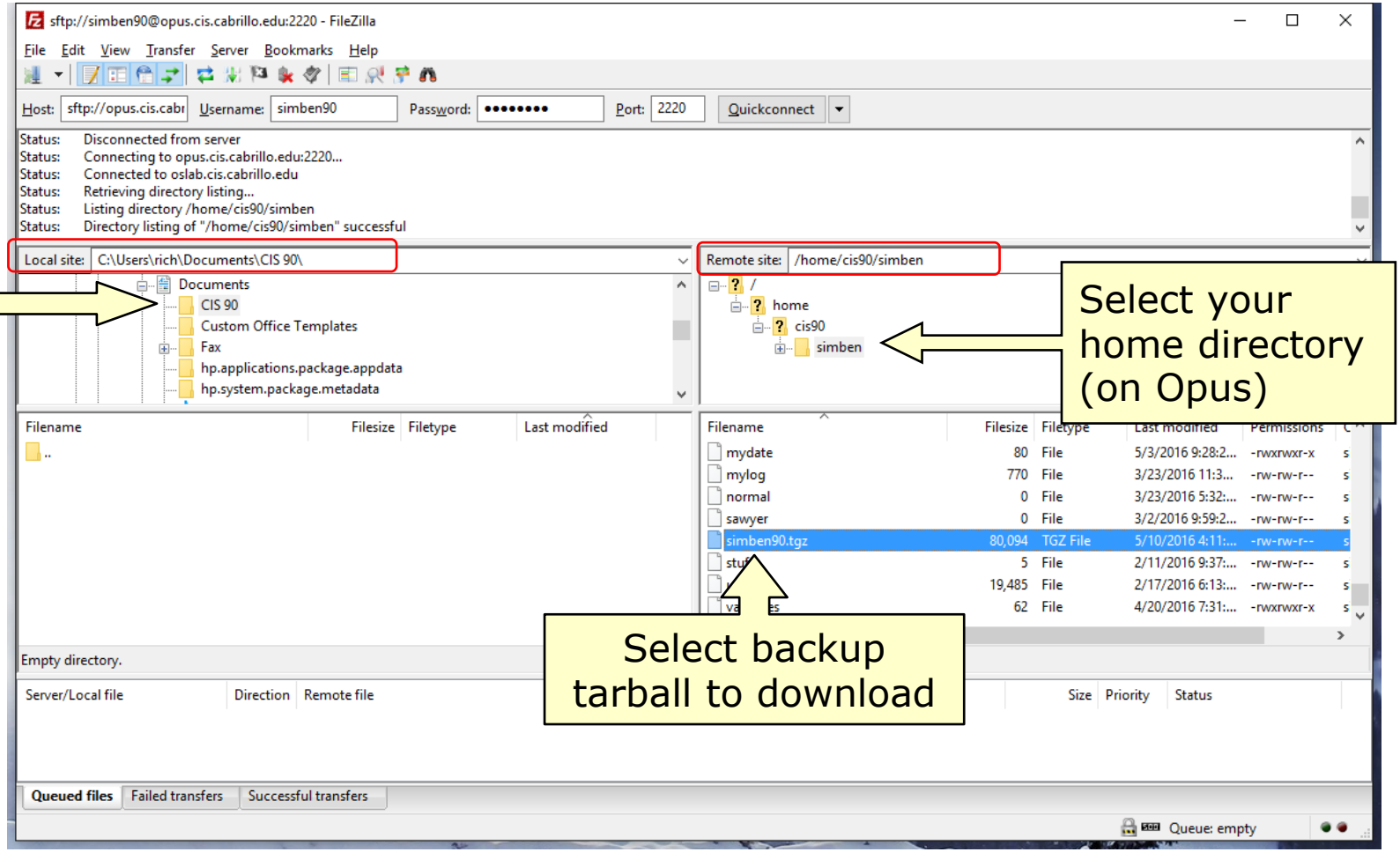
http://filezilla-project.org

Download and install FileZilla on your Windows PC

FileZilla On Windows, connect to your account on Opus-II

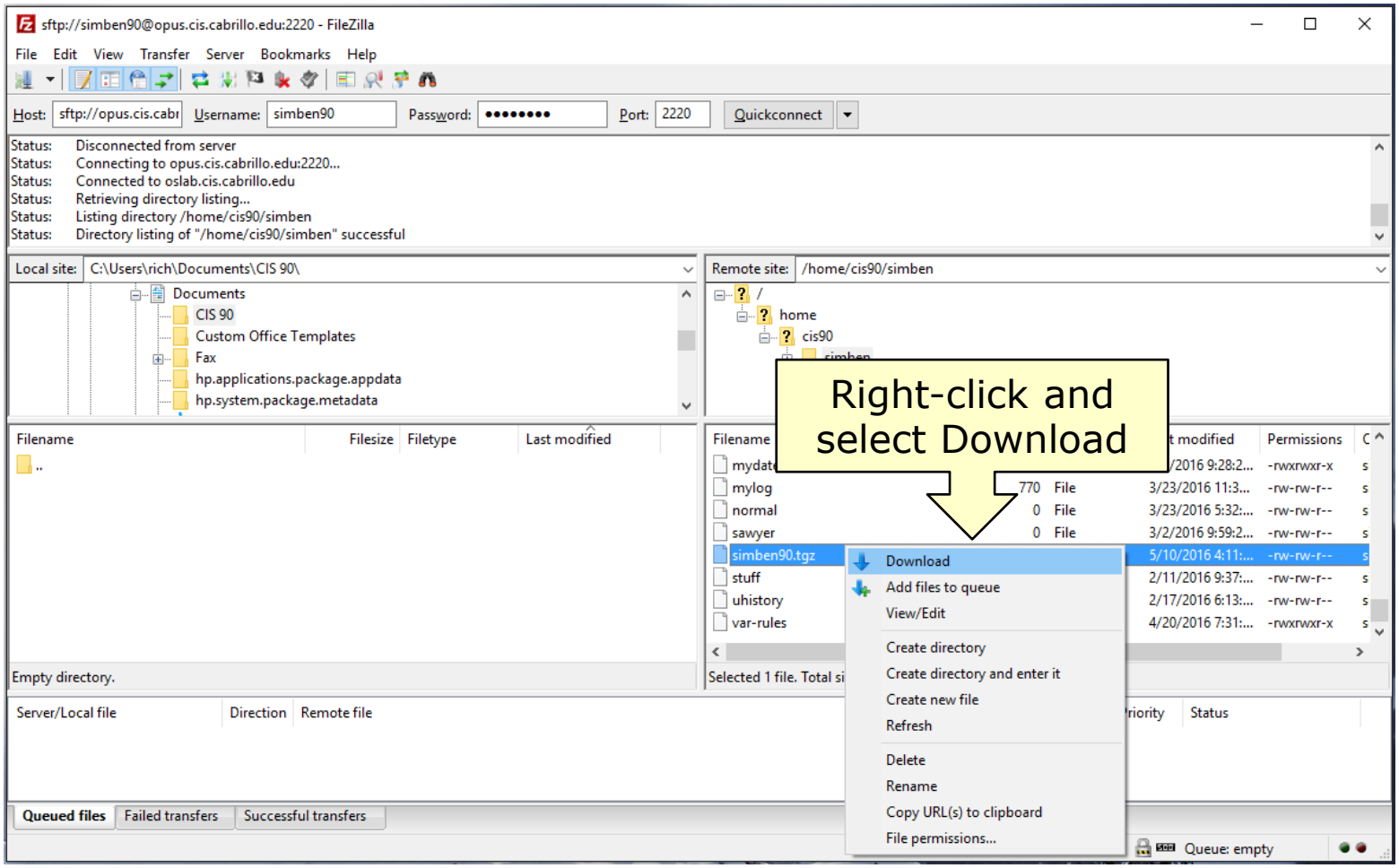


FileZilla Select destination and source directories

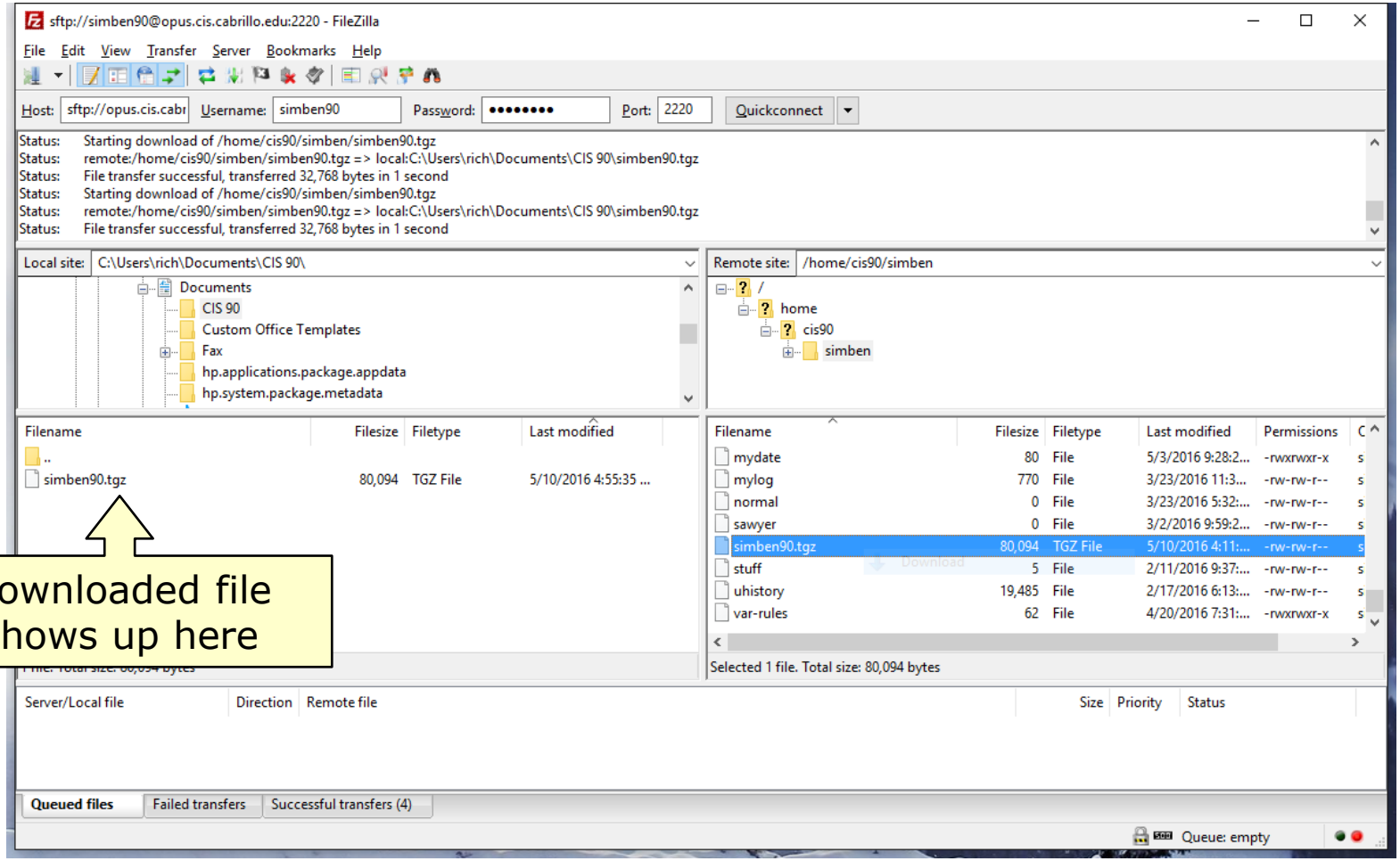


Select local Windows folder on the left and Opus-II file to download on the right

FileZilla Initiate Download

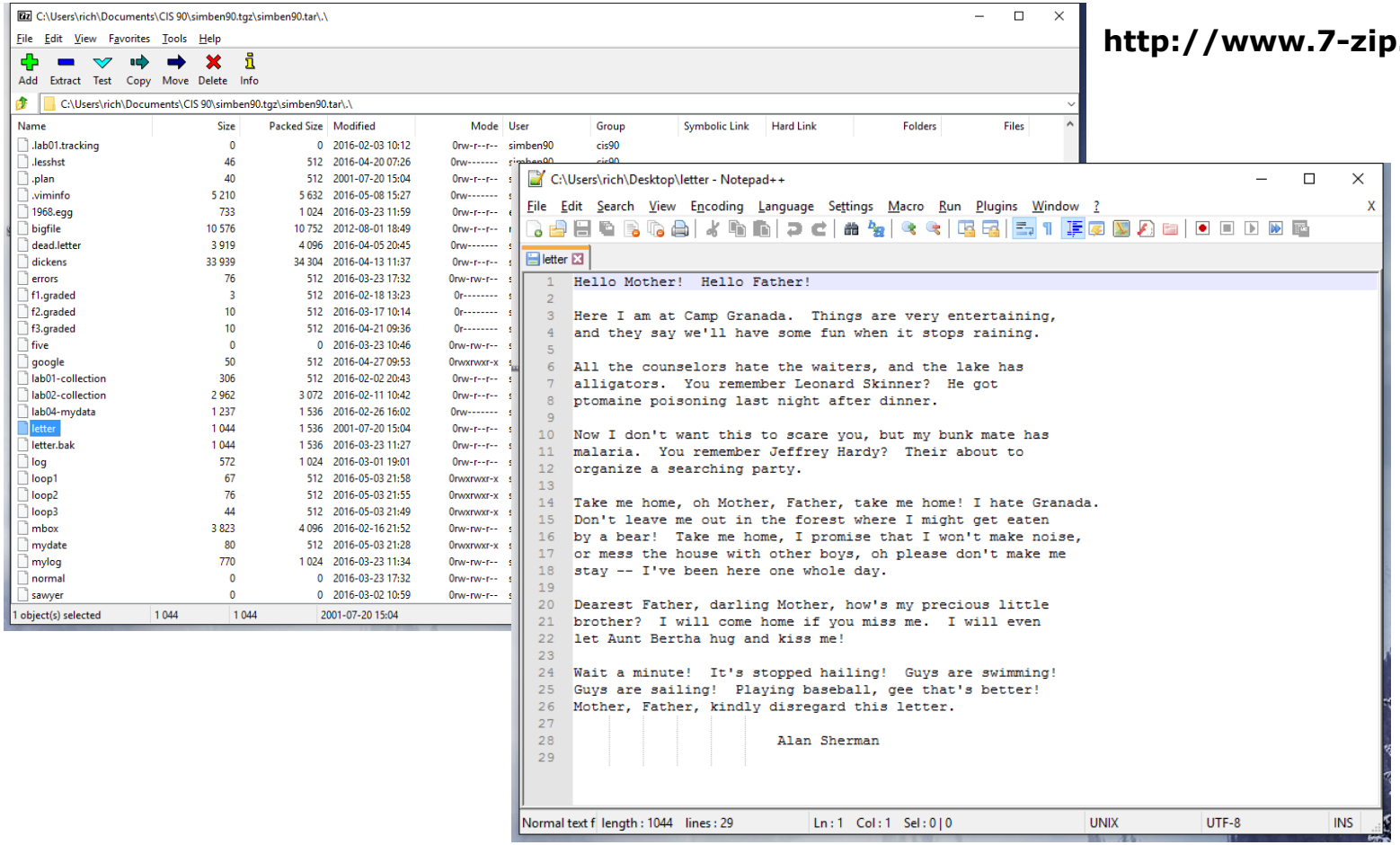


FileZilla Monitor transfer progress



FileZilla **File transfers**

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



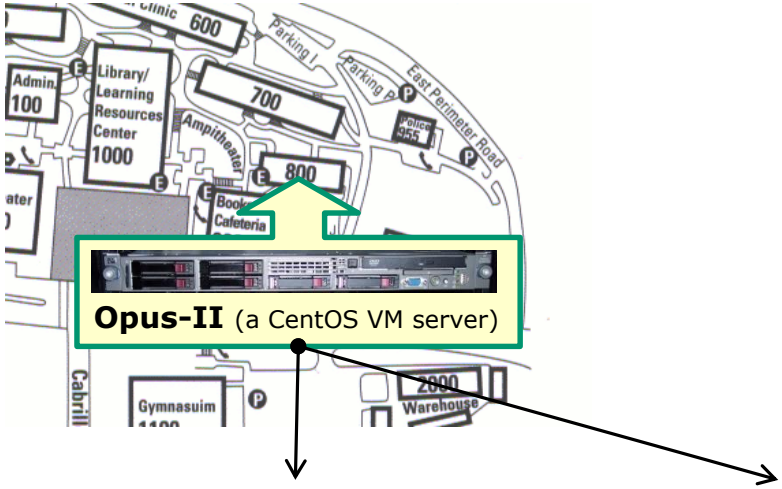
http://www.7-zip.org/

File Transfer Linux or Mac

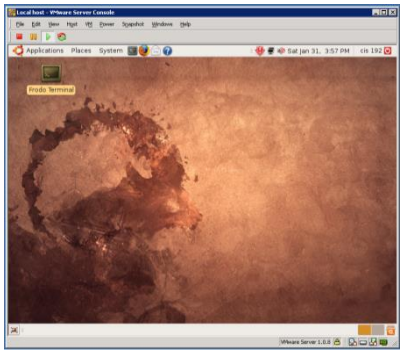
scp

File Transfer

Downloading your Opus-II files to your home computer



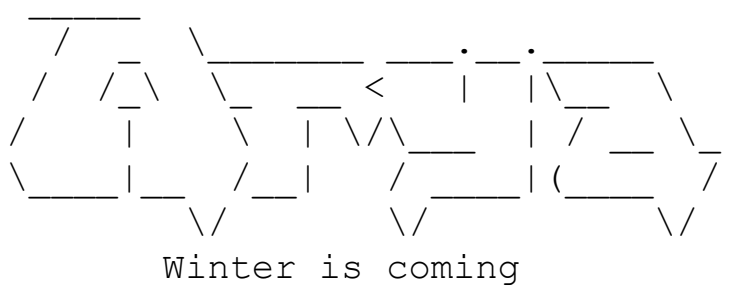
Mac



Linux

File Transfer

Downloading your Opus-II files to your Linux system



```
Winter is coming

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-ii.cis.cabrillo.edu:simben90.tgz .
simben90@opus-II.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-II

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

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

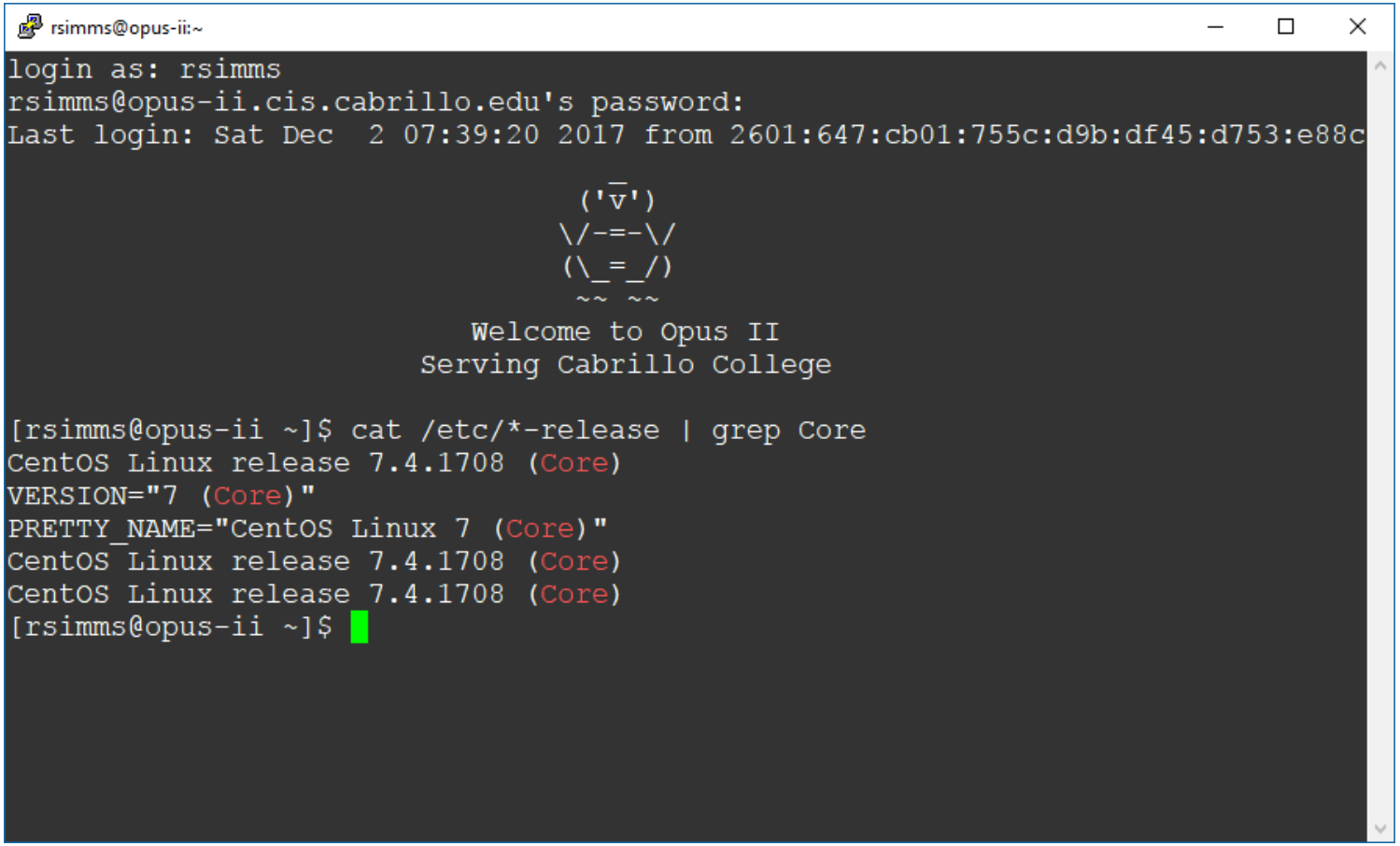
.tar.gz vs .tgz

```
/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-II



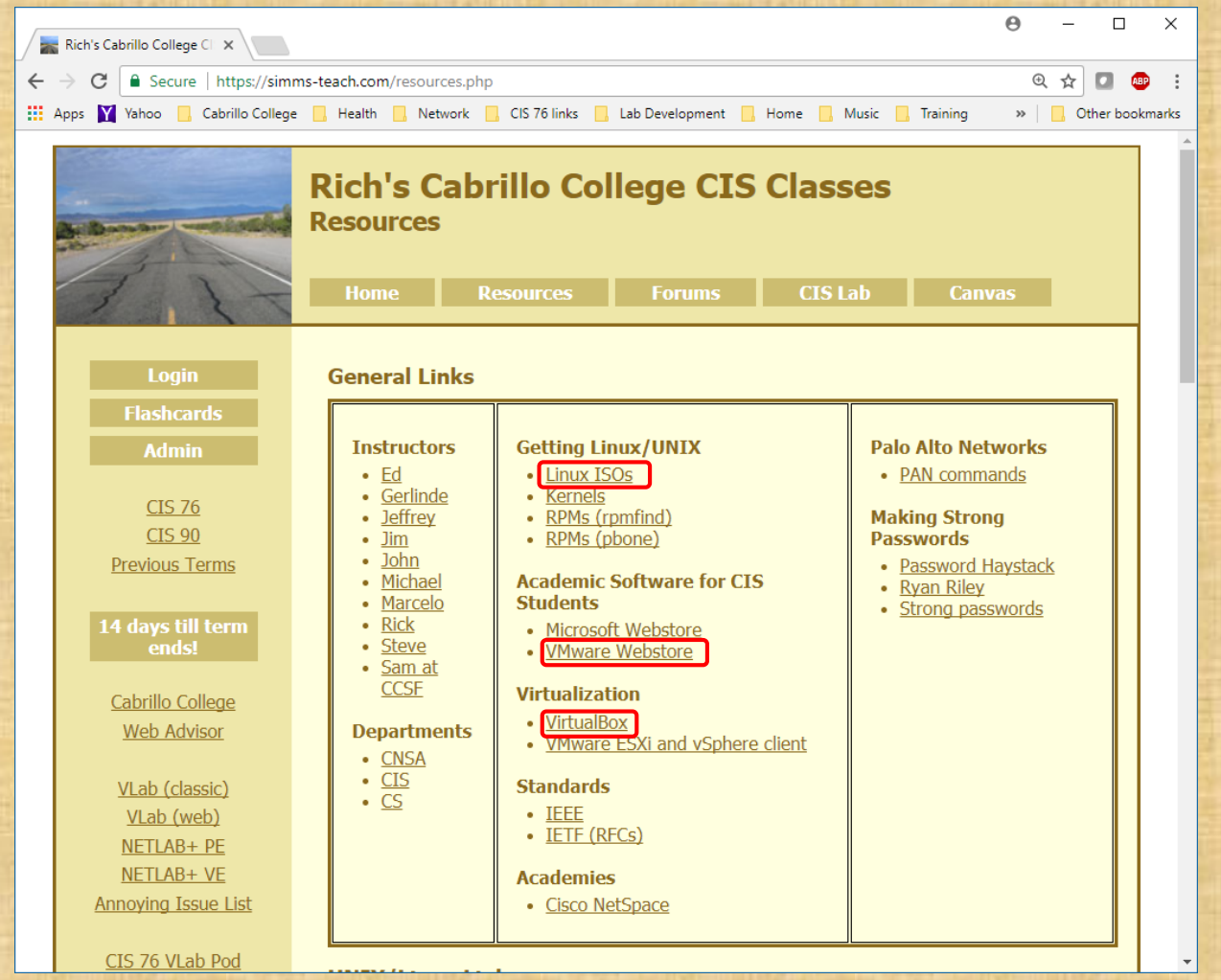
Opus-II is a CentOS 7.4 Linux system

Ingredients

To make your own Opus-II 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

https://simms-teach.com/resources.php



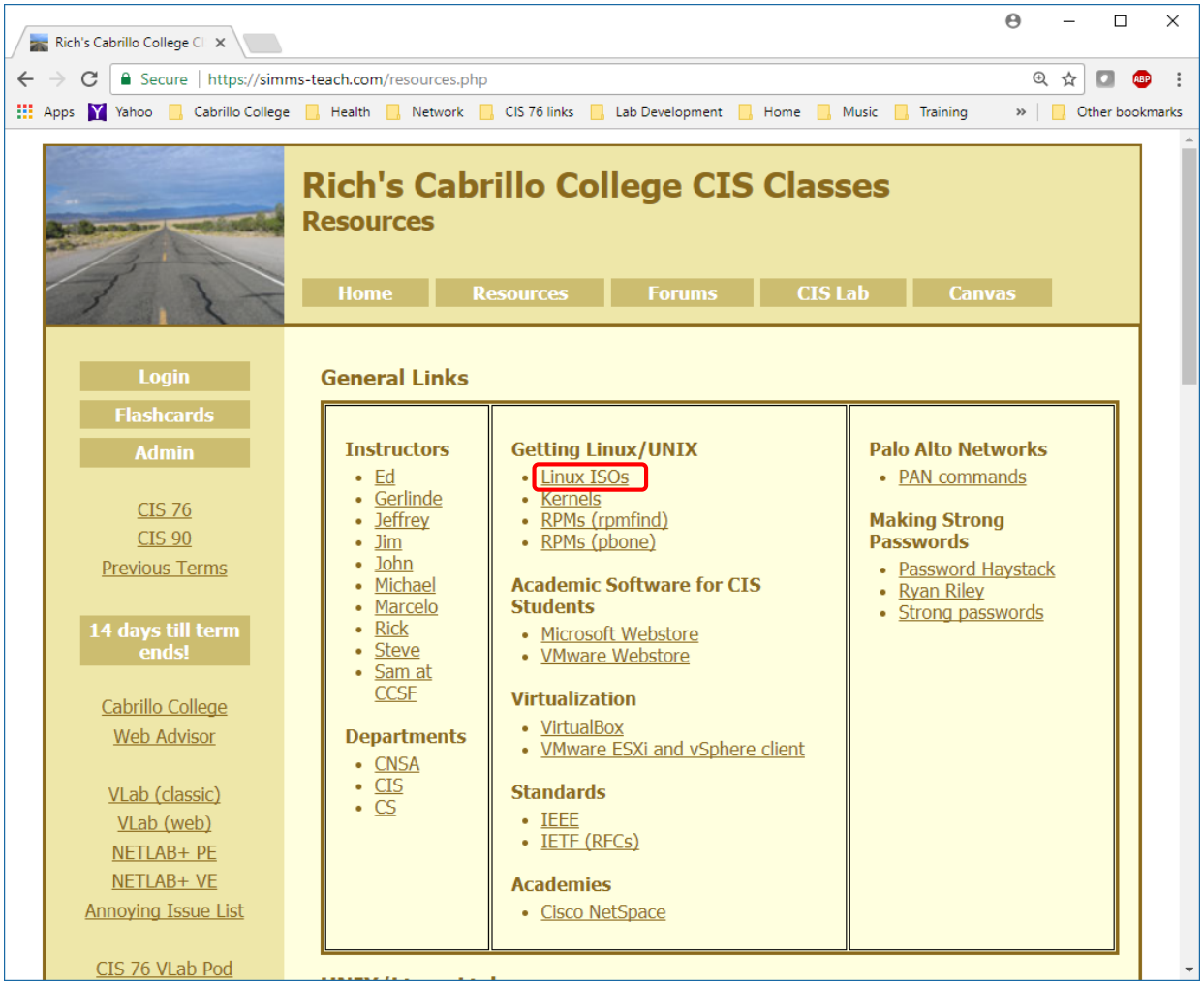
Shopping for the ingredients

https://simms-teach.com/resources.php

ISO

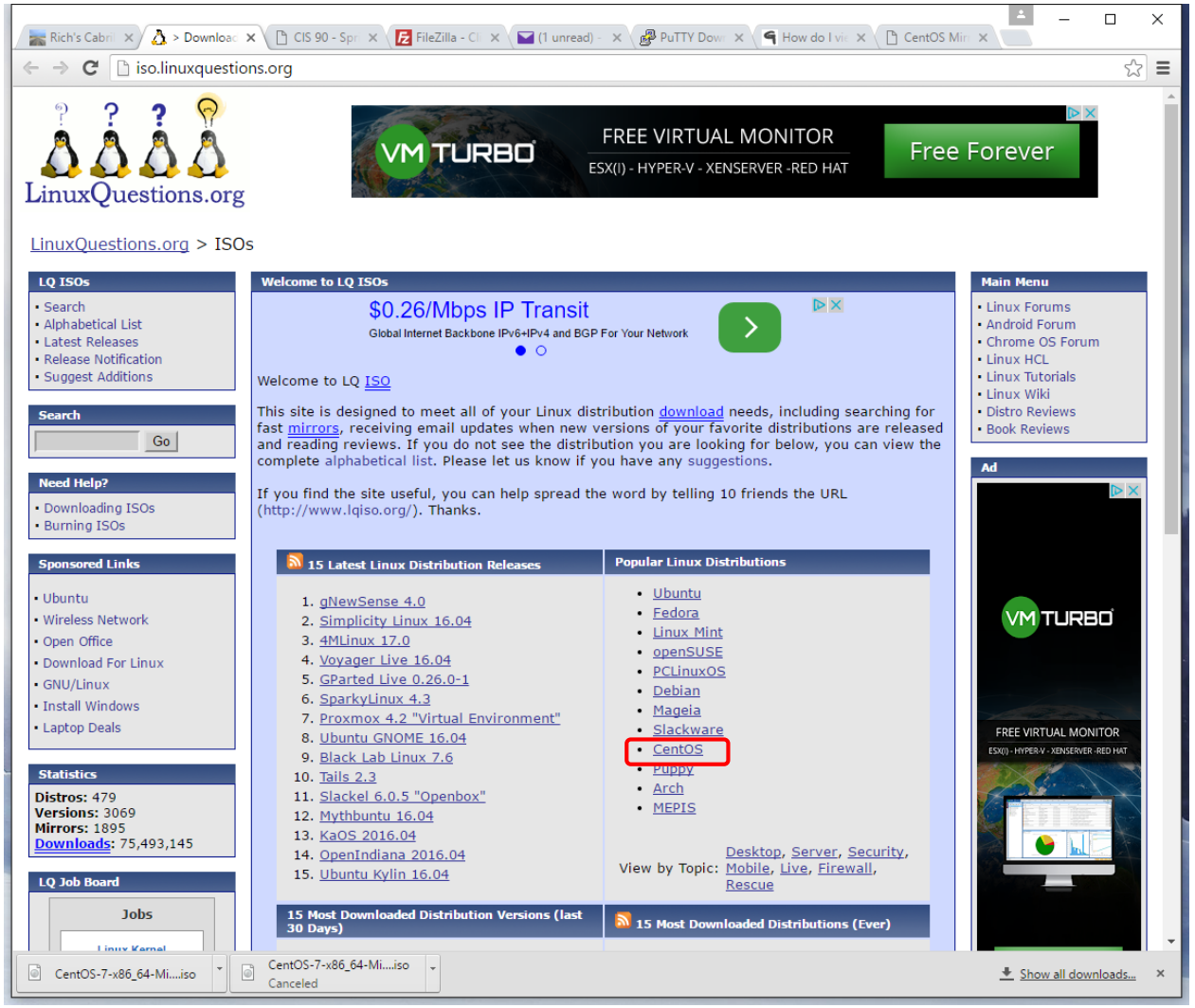
Get a Linux Distro

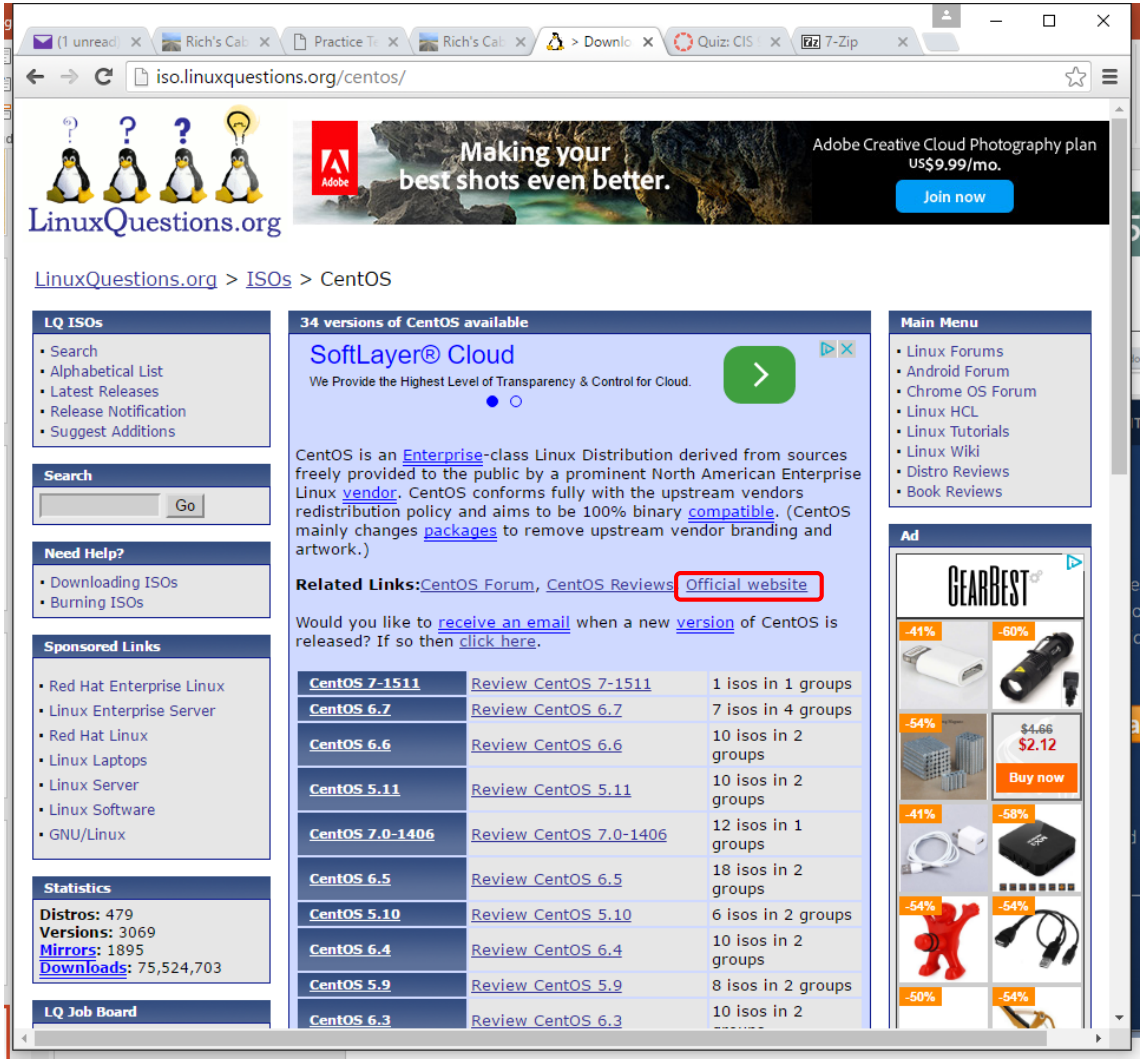
https://simms-teach.com/resources.php



Getting Linux distributions on ISOs

https://simms-teach.com/resources.php


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
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LQ ISOs
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• 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
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• Android Forum
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https://www.centos.org
CentOS
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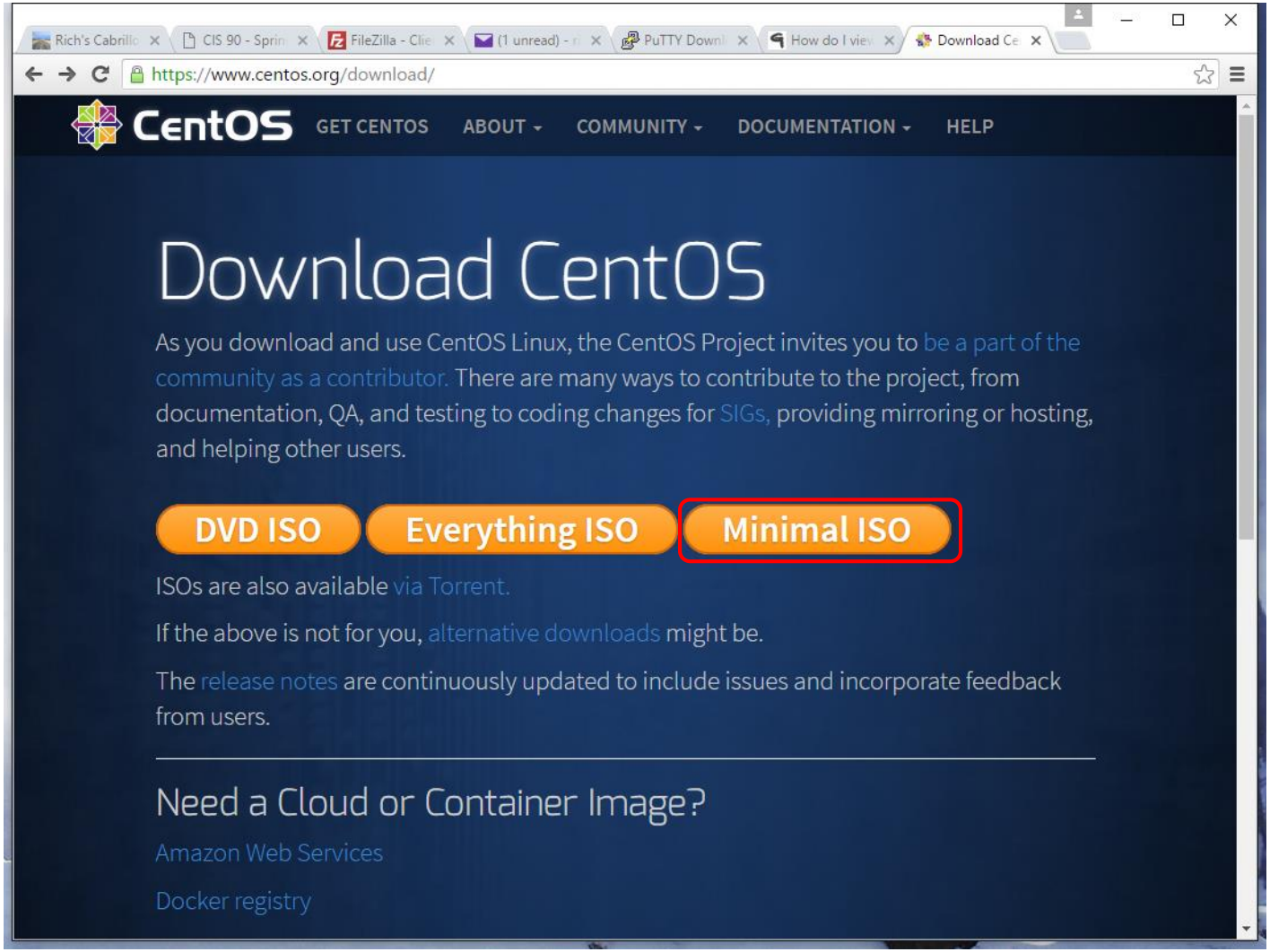
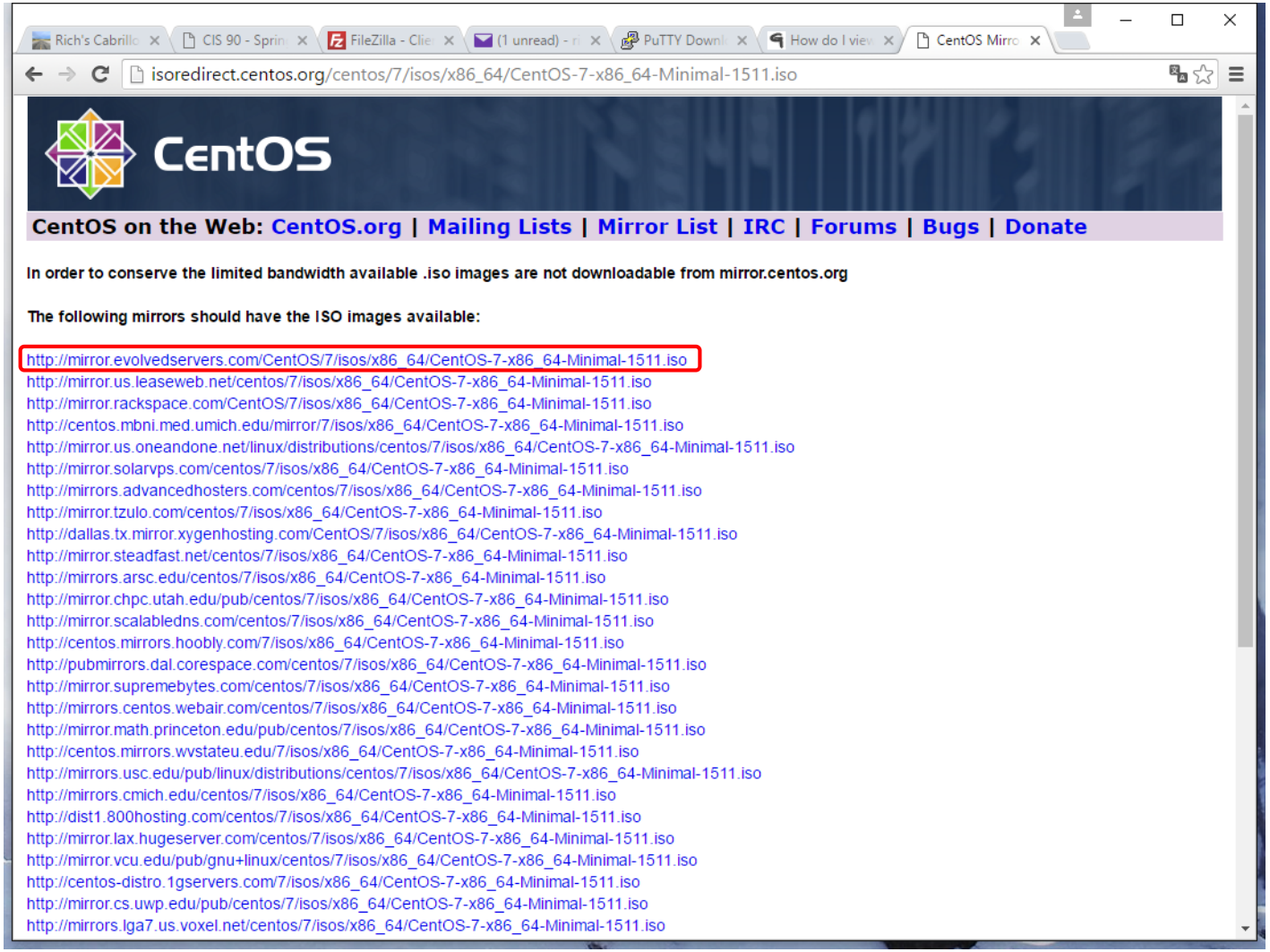
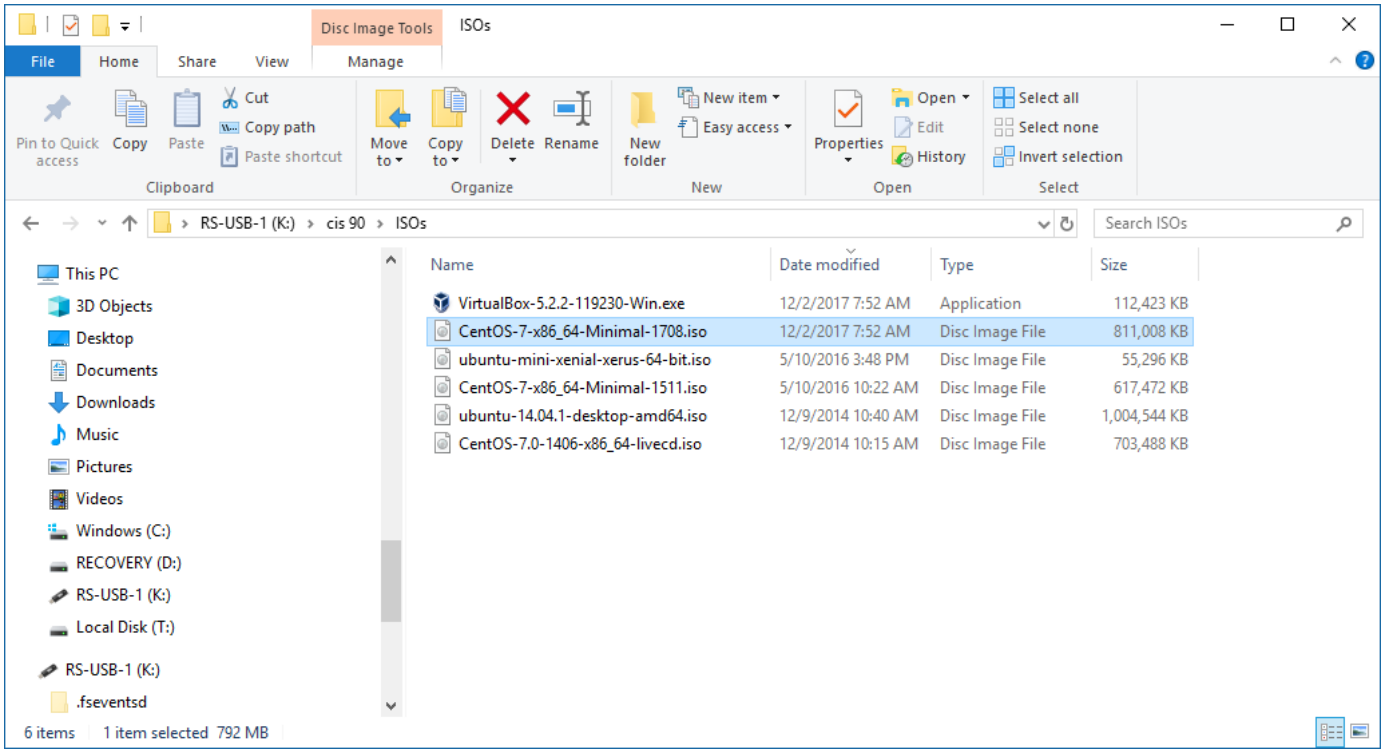
ABOUT
COMMUNITY
DOCUMENTATION
HELP
The CentOS Project
The CentOS Project is a community-driven free software effort focused on delivering a robust open source ecosystem. For users, we offer a consistent manageable platform that suits a wide variety of deployments. For open source communities, we offer 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


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



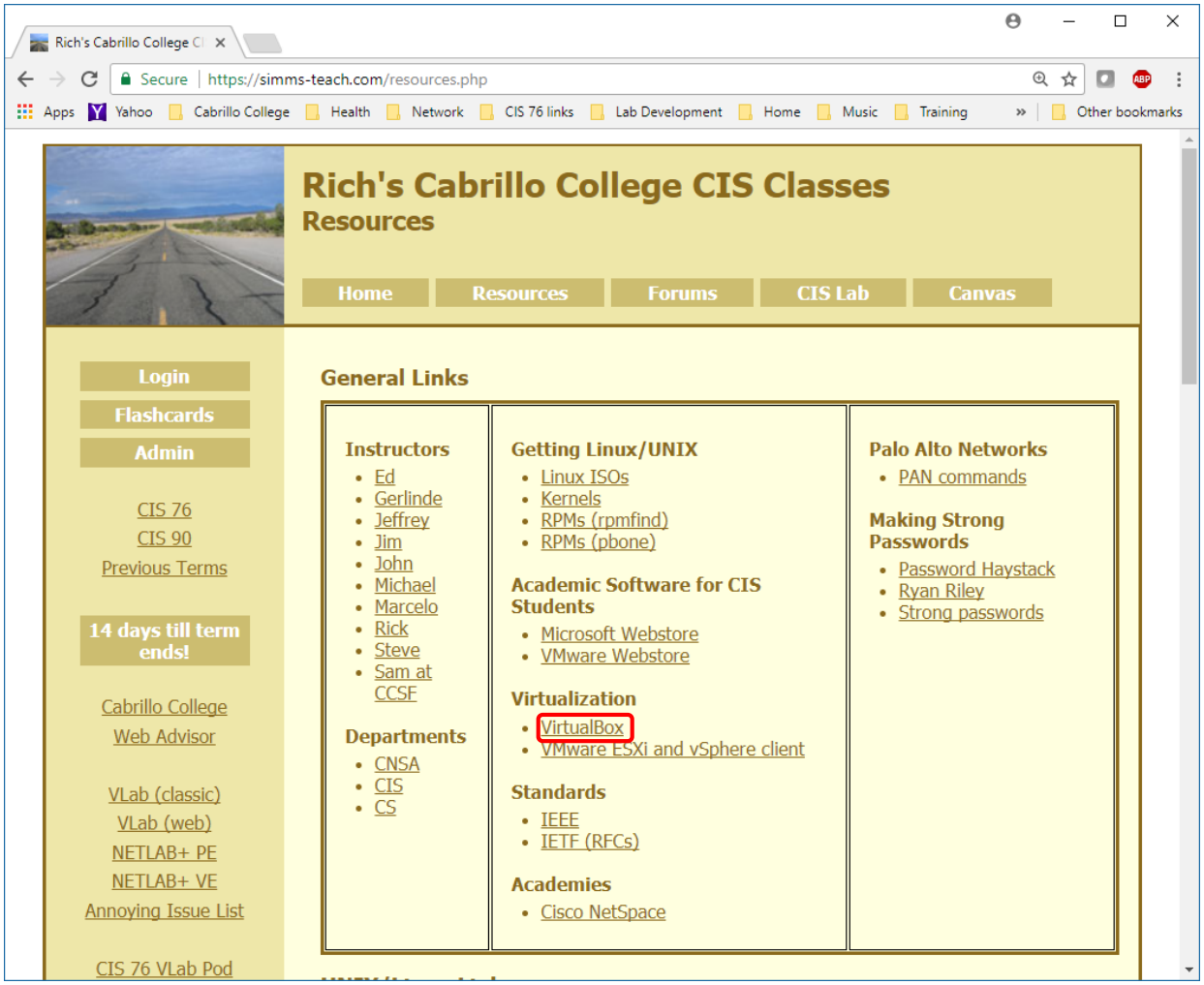
Pick a mirror and download ISO file



Downloaded ISO image of the CentOS Linux distribution

Virtual Box

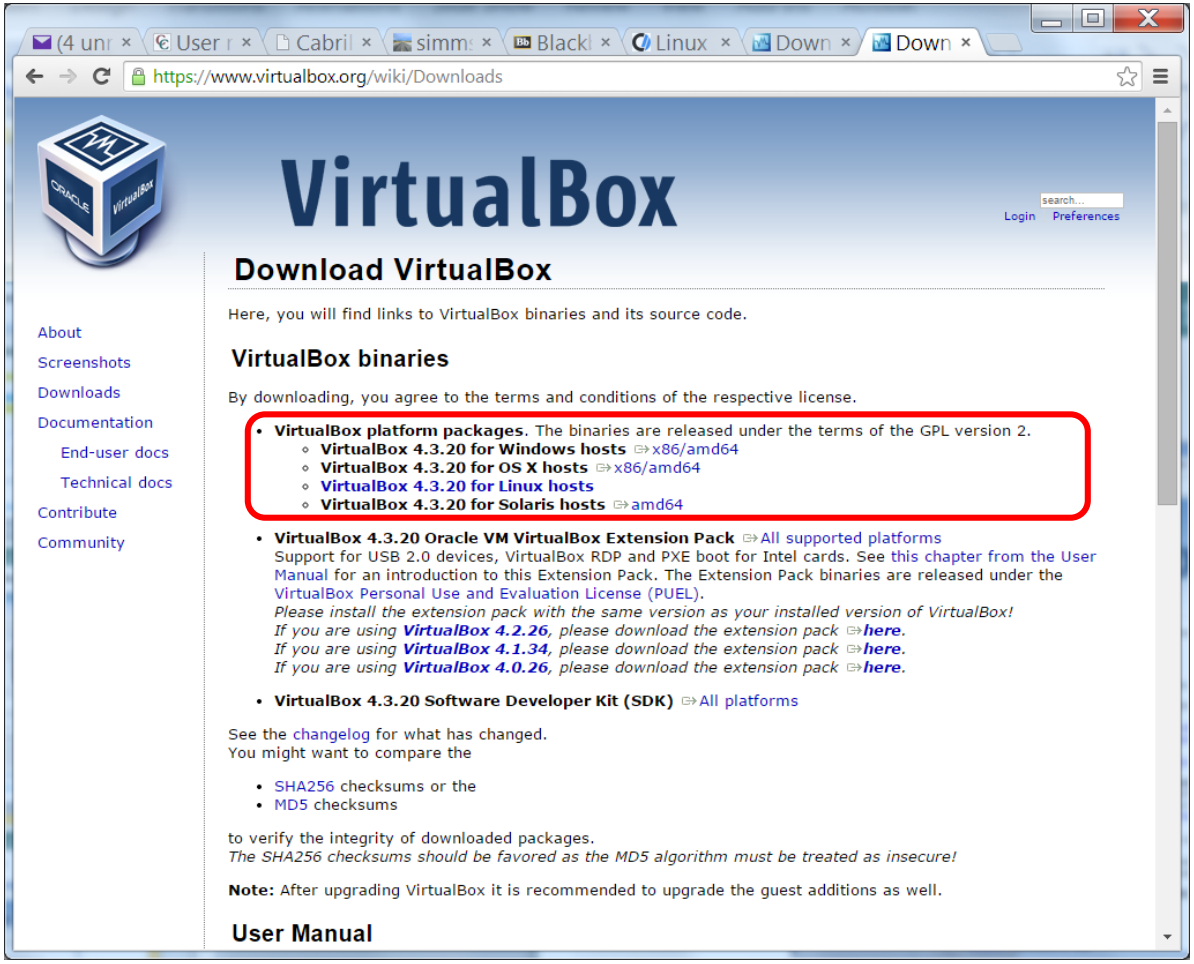
https://simms-teach.com/resources.php



Getting VirtualBox

https://simms-teach.com/resources.php

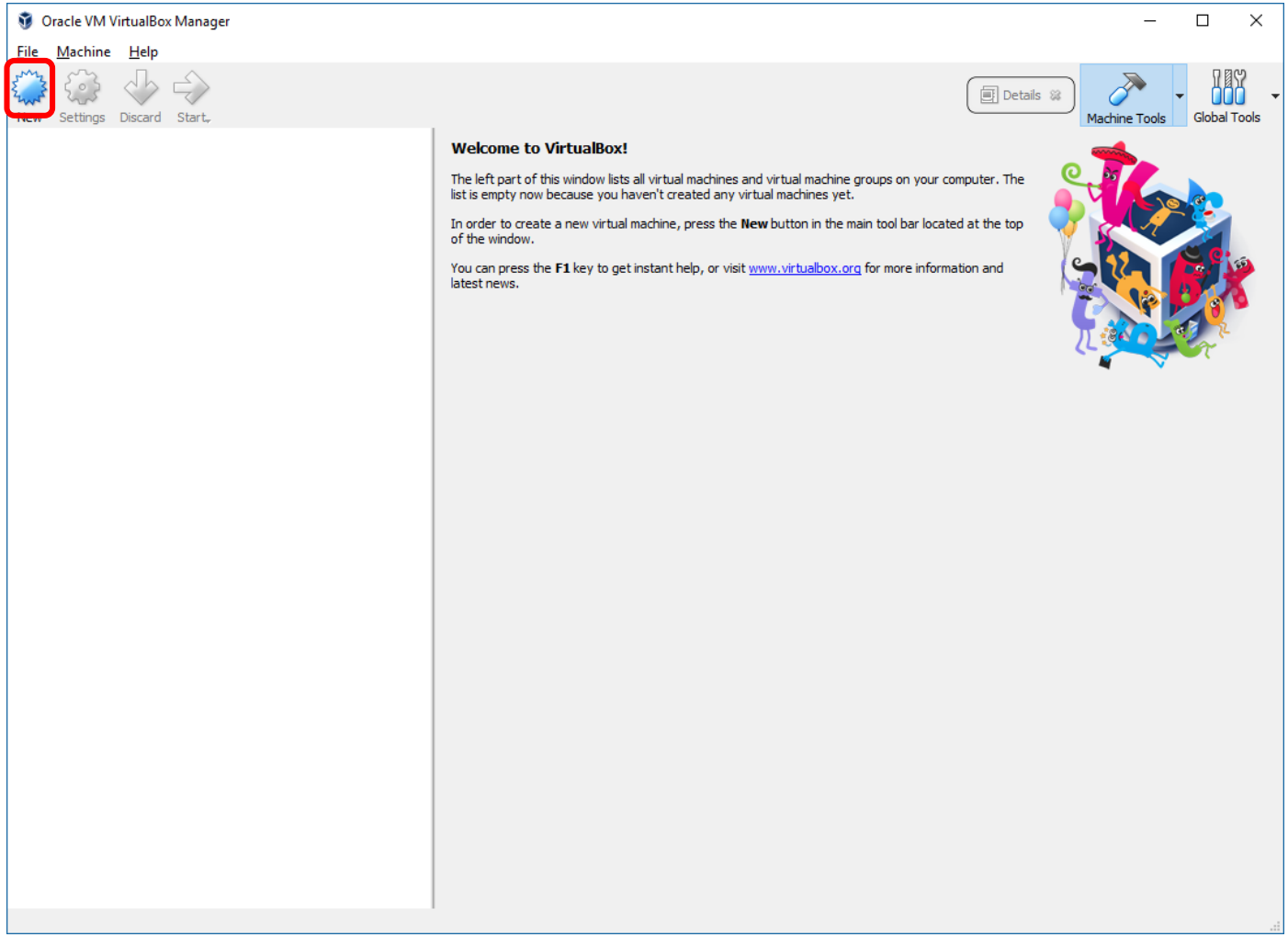
virtualbox.org



Downloading VirtualBox

VirtualBox

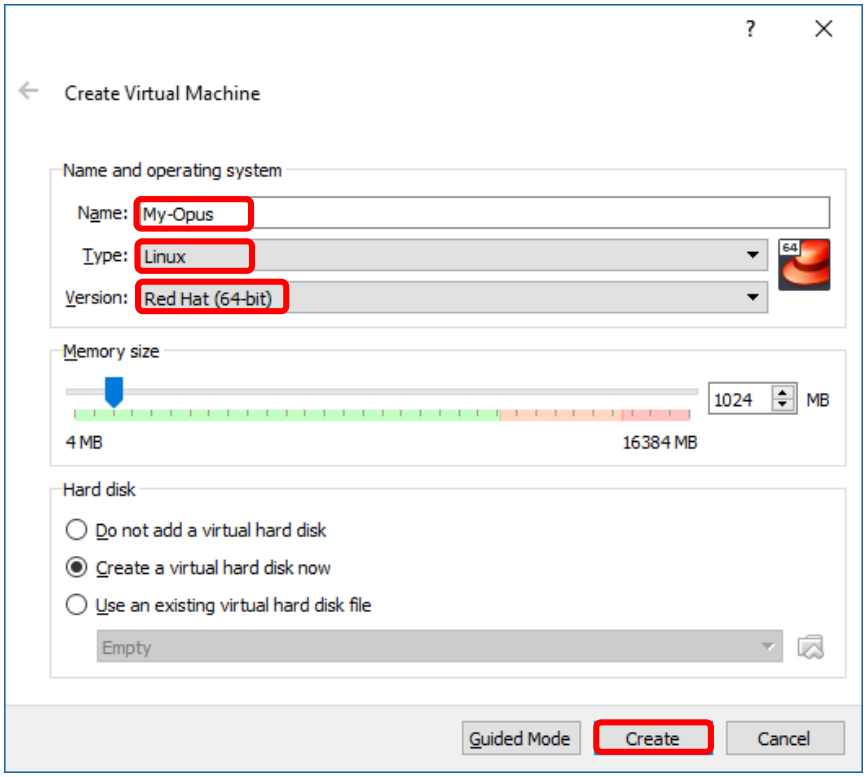
Click the New button to create a new VM.

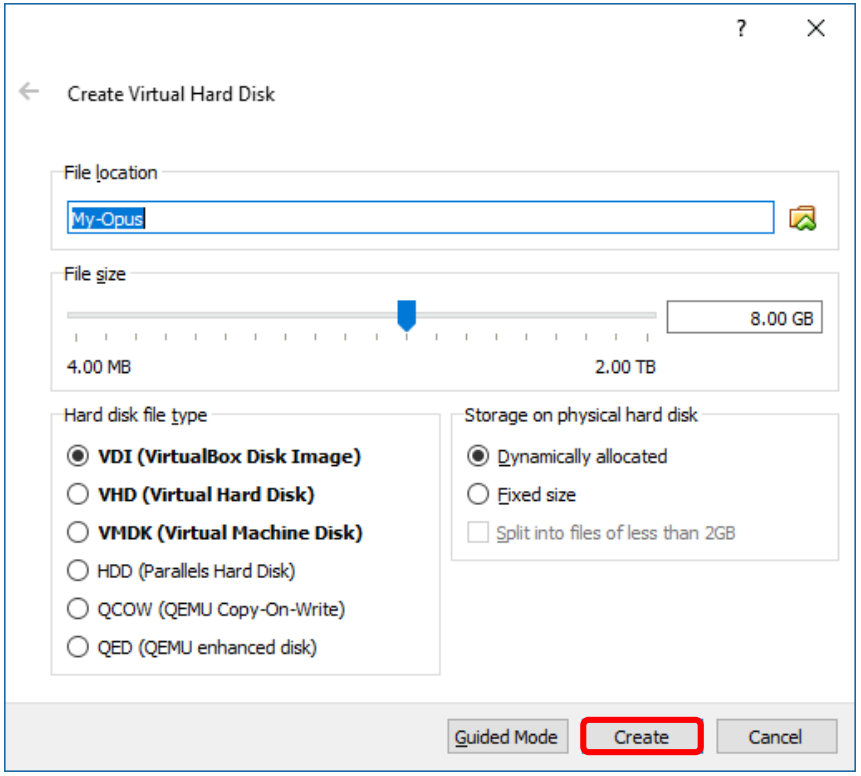


After downloading and installing VirtualBox.

VirtualBox

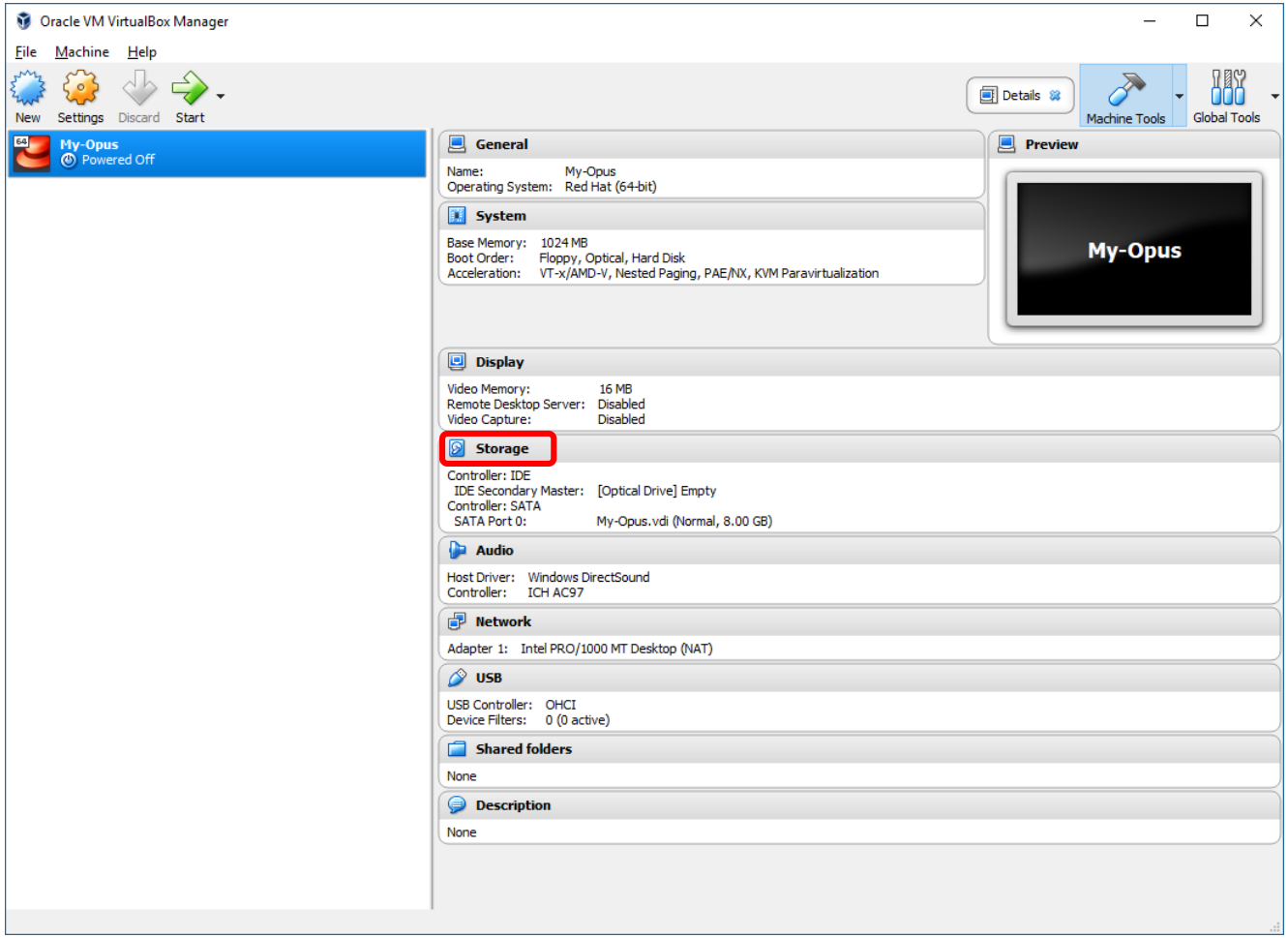
Check that virtualization is enabled in your computer's BIOS so you can create 64 bit VMs





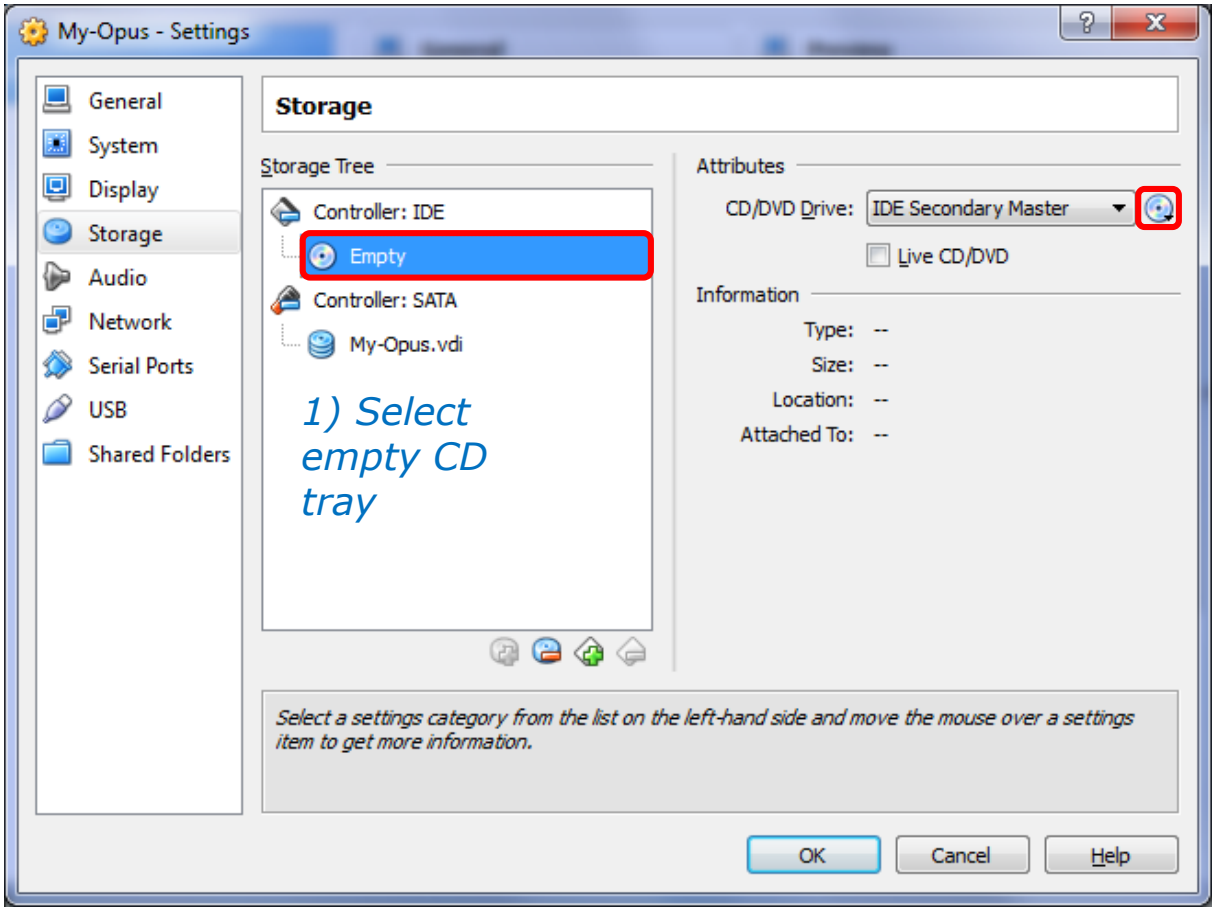
After filling out the Name and operating system, keep pressing Create and take the defaults

VirtualBox



The new VM has no operating system. Click on "Storage".

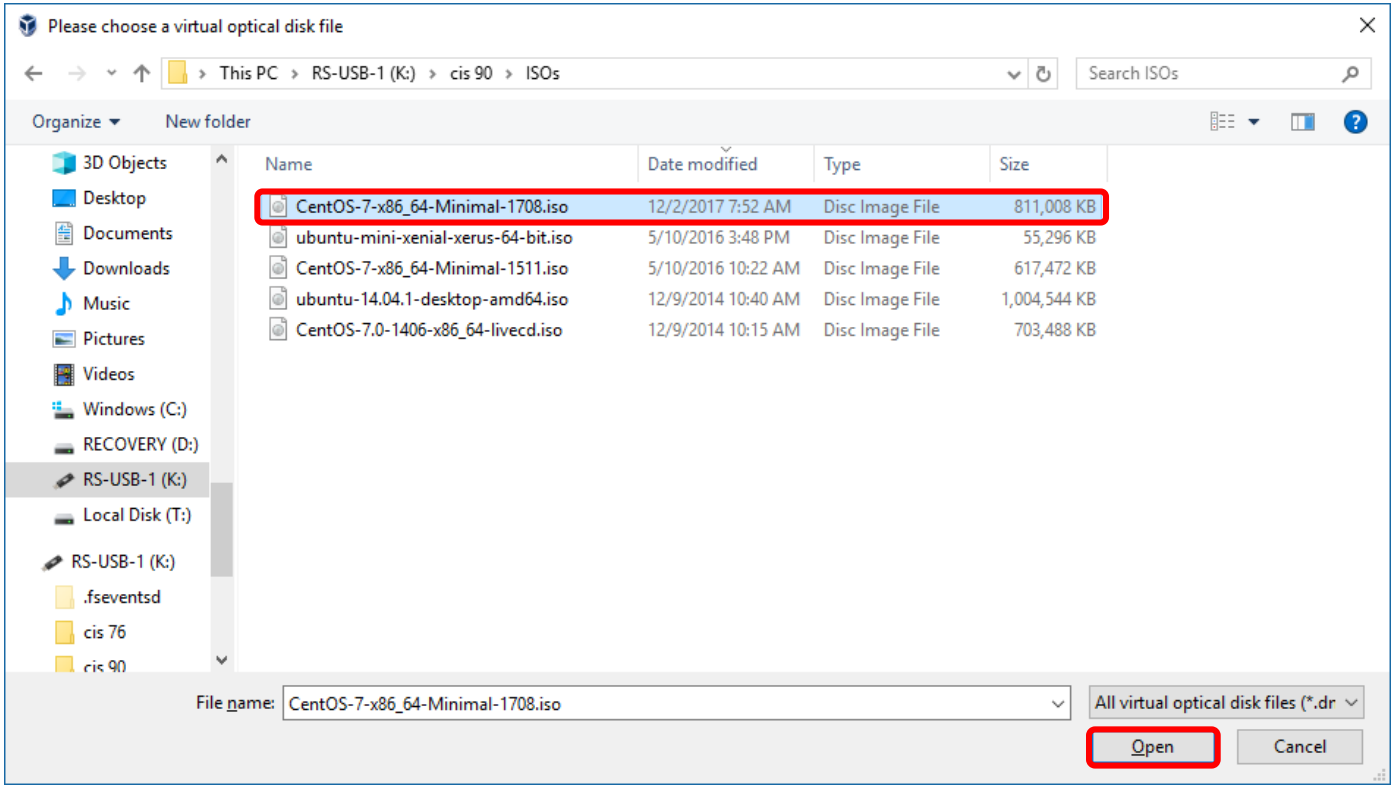
VirtualBox



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

Put the CD ISO image into the virtual CD tray

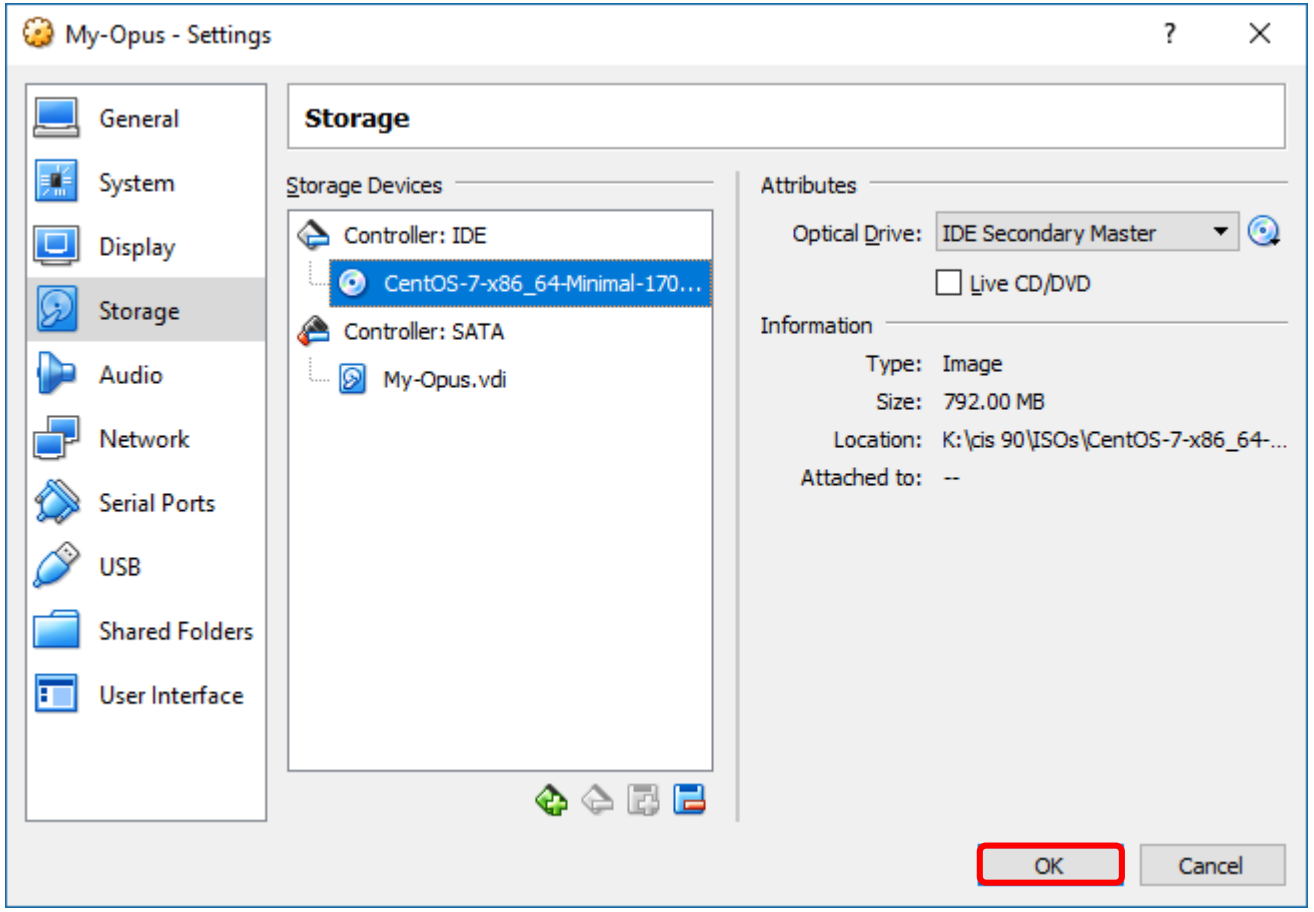
VirtualBox



Locate the ISO image to install

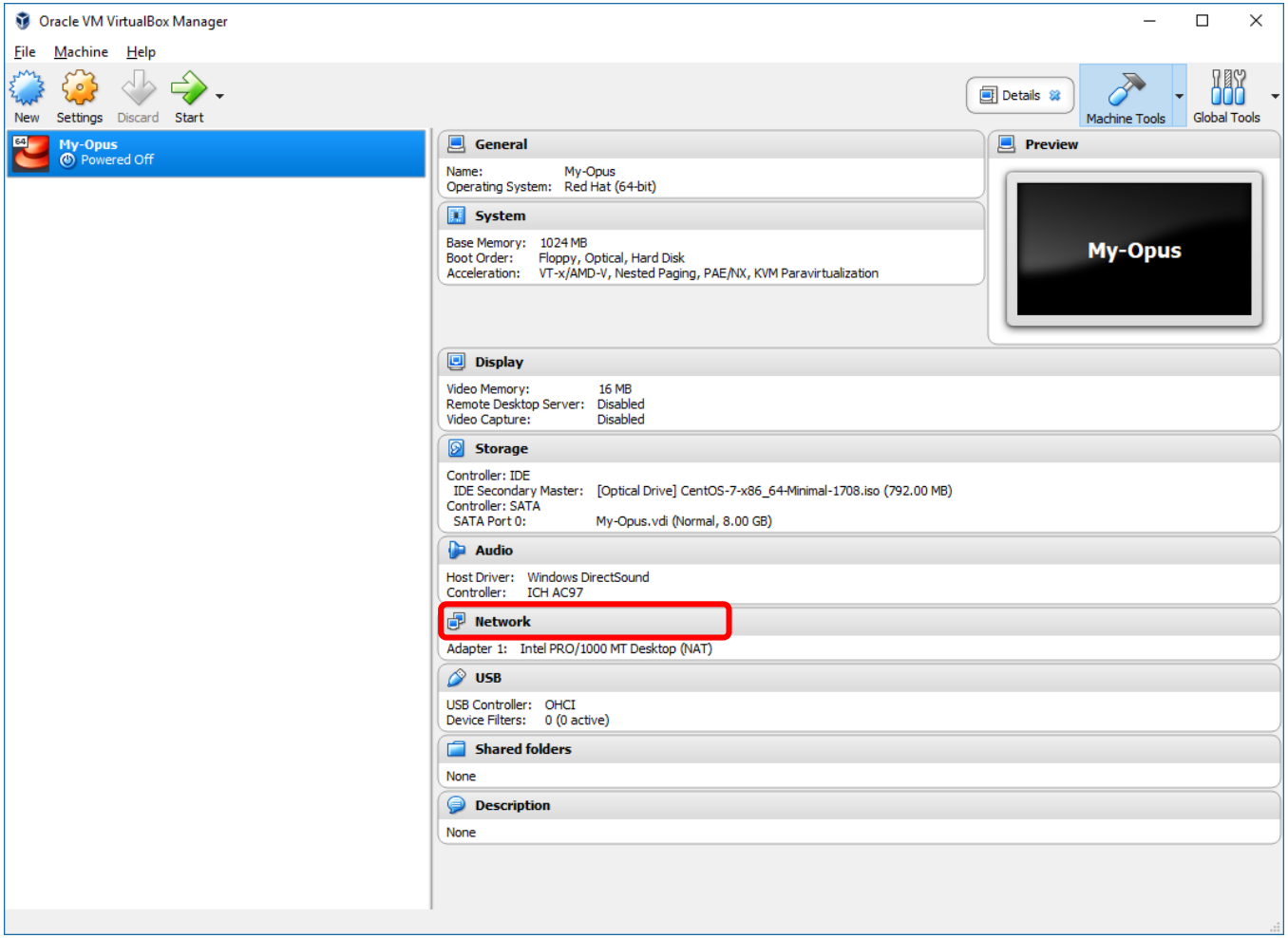
Select the ISO image previously downloaded

VirtualBox

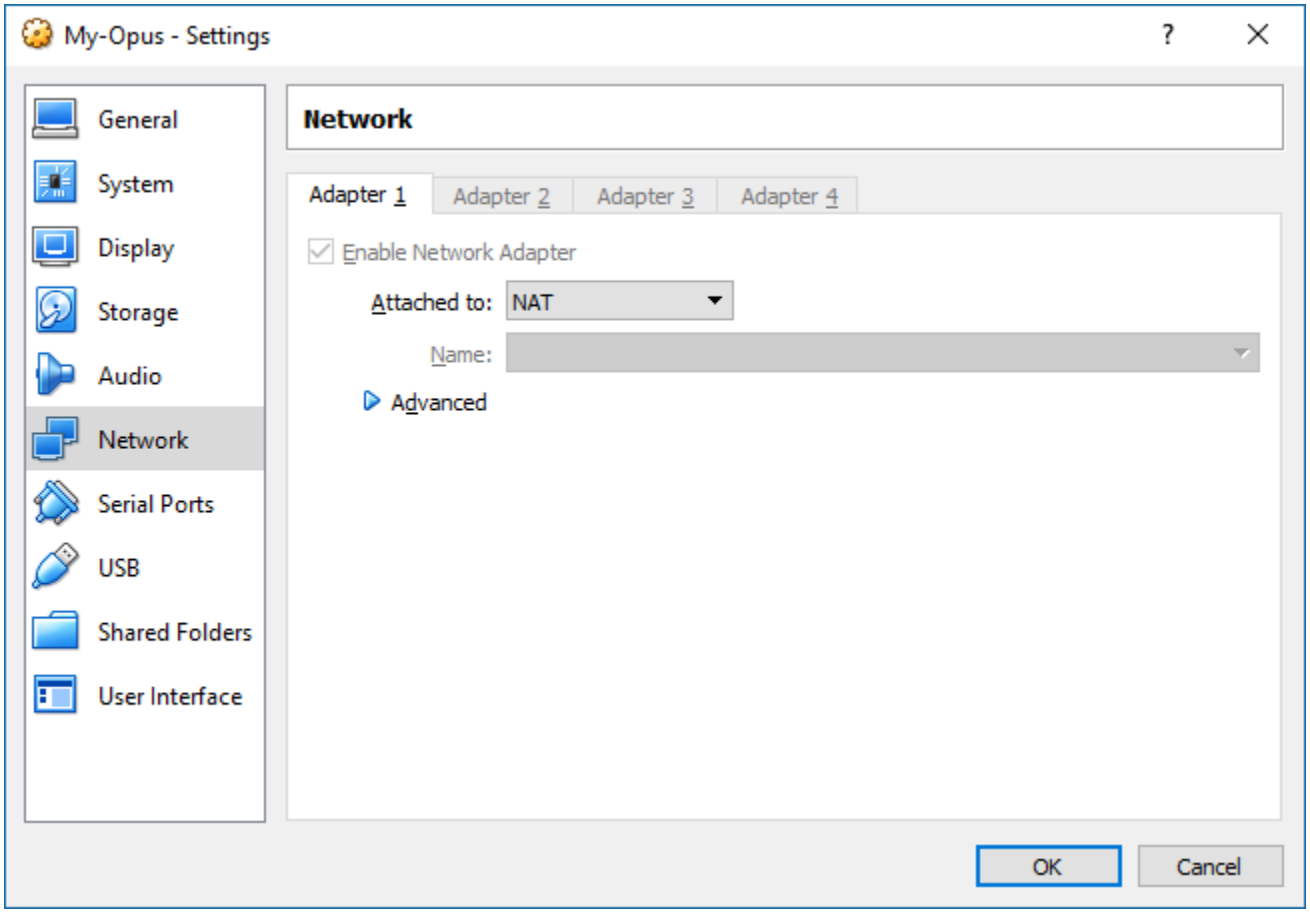


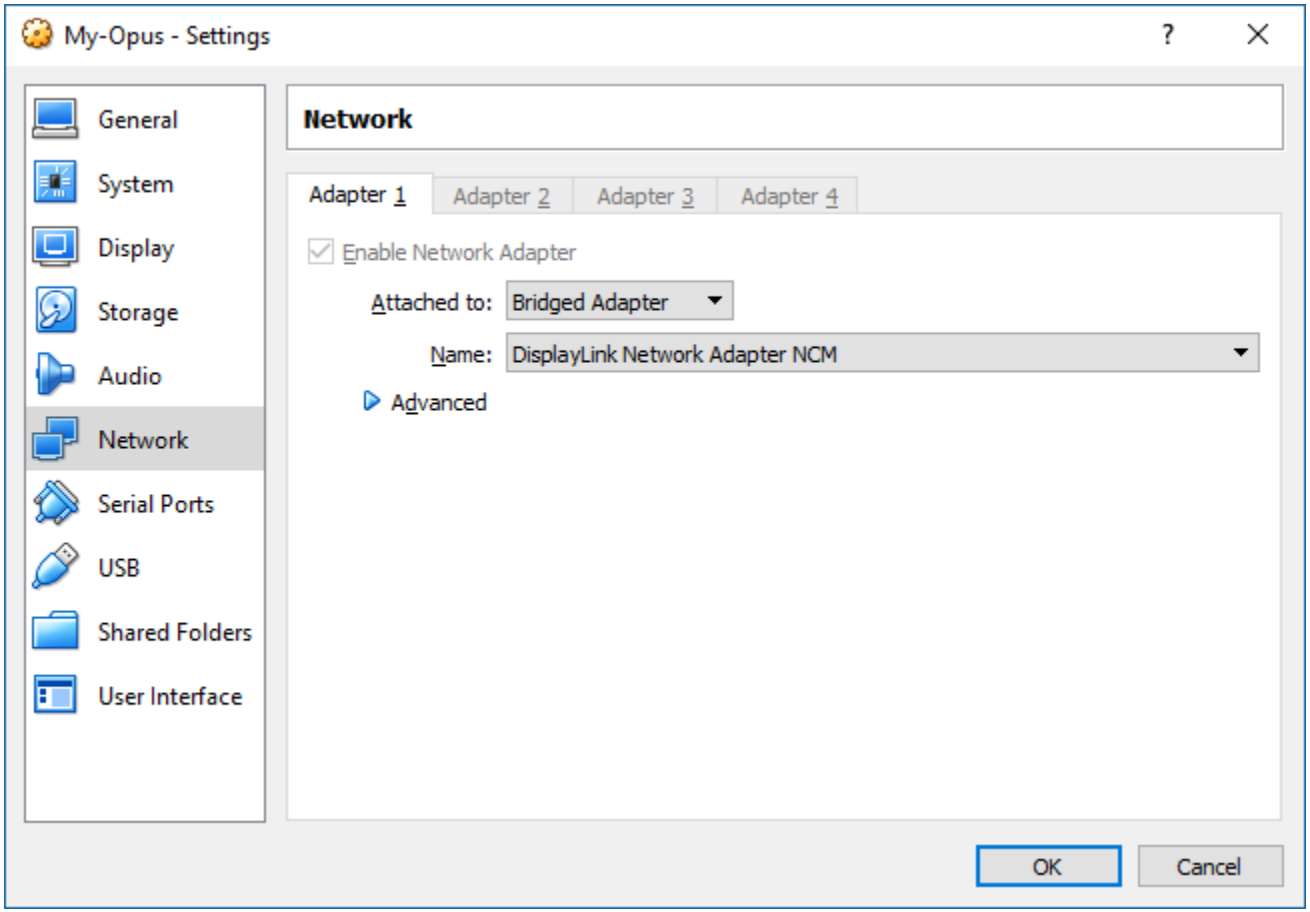
The CD (and ISO image) is now in the virtual CD tray

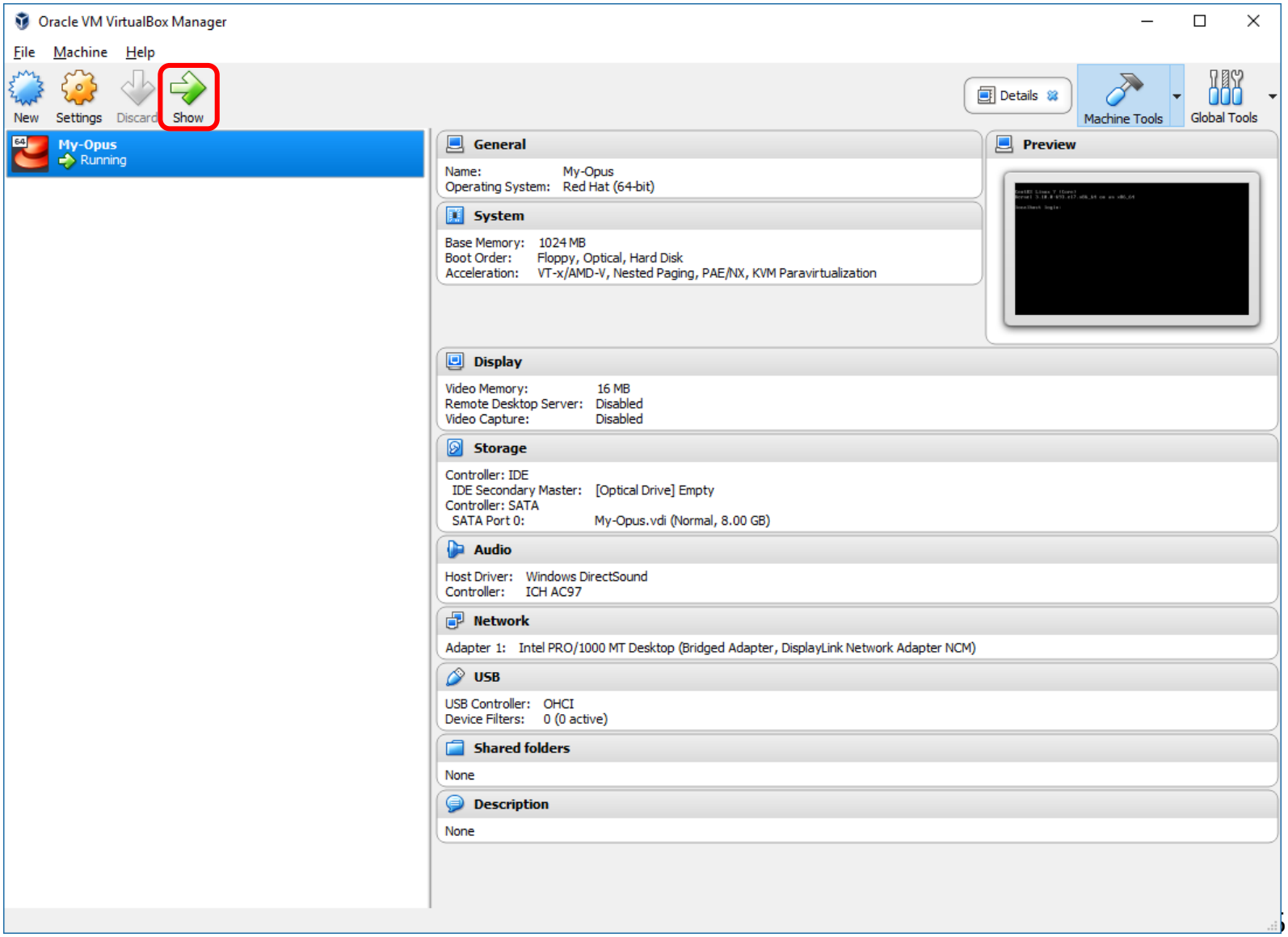
VirtualBox

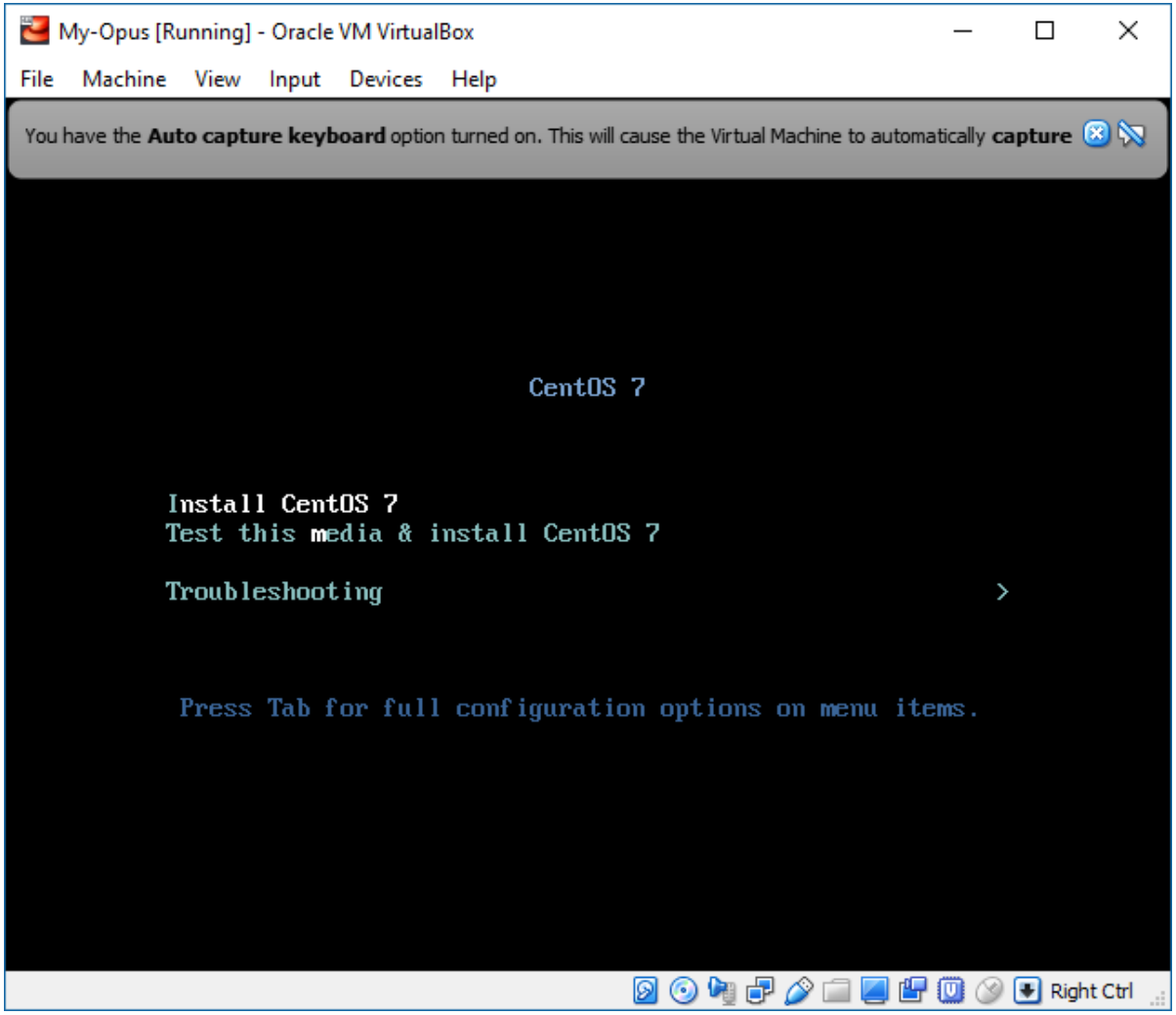


Click on Network


My-Opus - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
NAT
Name:
Advanced
OK
Cancel

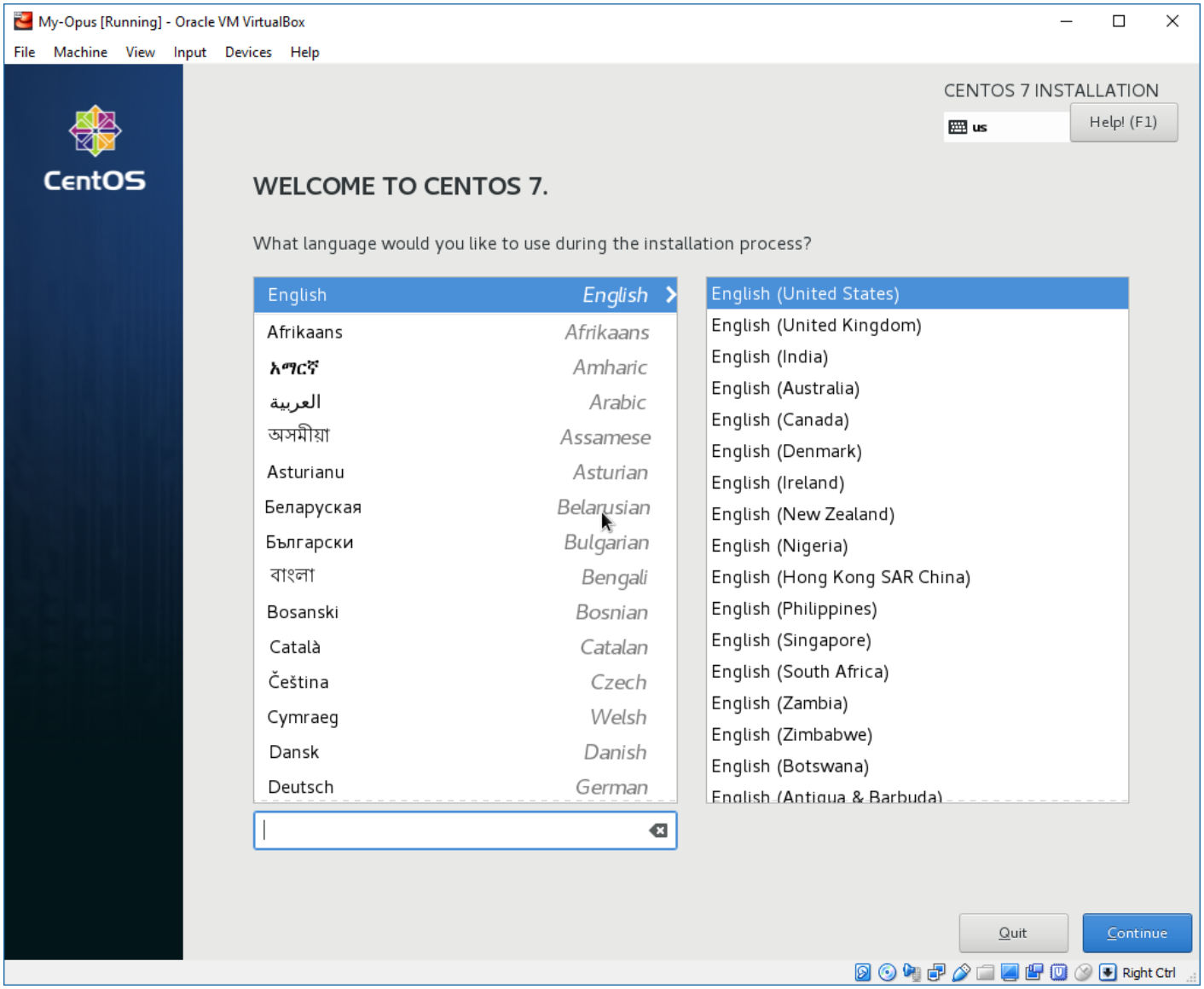

My-Opus - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Bridged Adapter
Name:
DisplayLink Network Adapter NCM
Advanced
OK
Cancel

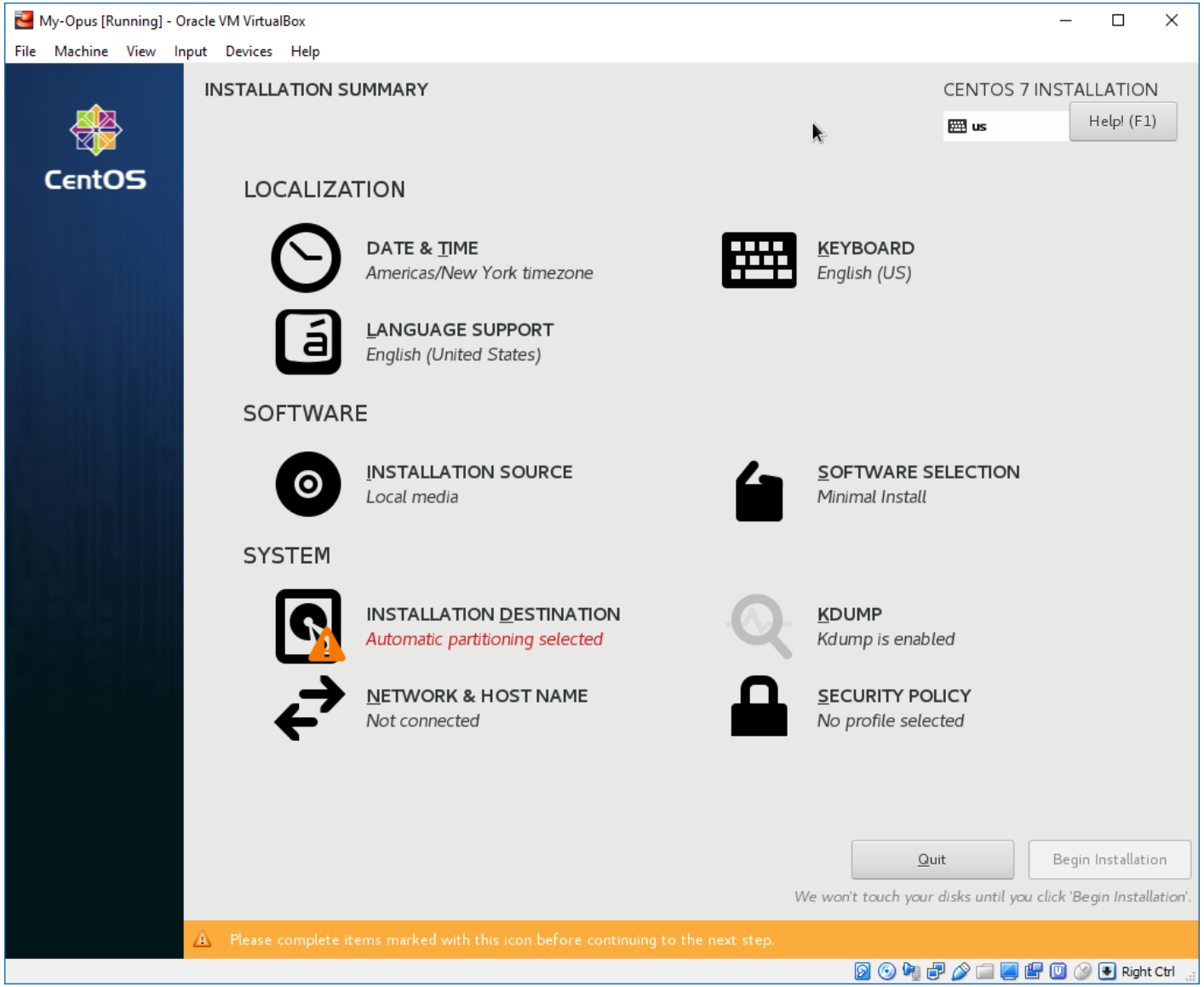

Oracle VM VirtualBox Manager
File Machine Help
New Settings Discard Show
Details
Machine Tools
Global Tools
My-Opus
Running
General
Name: My-Opus
Operating System: Red Hat (64-bit)
System
Base Memory: 1024 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, PAE/NX, KVM Paravirtualization
Preview
Display
Video Memory: 16 MB
Remote Desktop Server: Disabled
Video Capture: Disabled
Storage
Controller: IDE
IDE Secondary Master: [Optical Drive] Empty
Controller: SATA
SATA Port 0: My-Opus.vdi (Normal, 8.00 GB)
Audio
Host Driver: Windows DirectSound
Controller: ICH AC97
Network
Adapter 1: Intel PRO/1000 MT Desktop (Bridged Adapter, DisplayLink Network Adapter NCM)
USB
USB Controller: OHCI
Device Filters: 0 (0 active)
Shared folders
None
Description
None

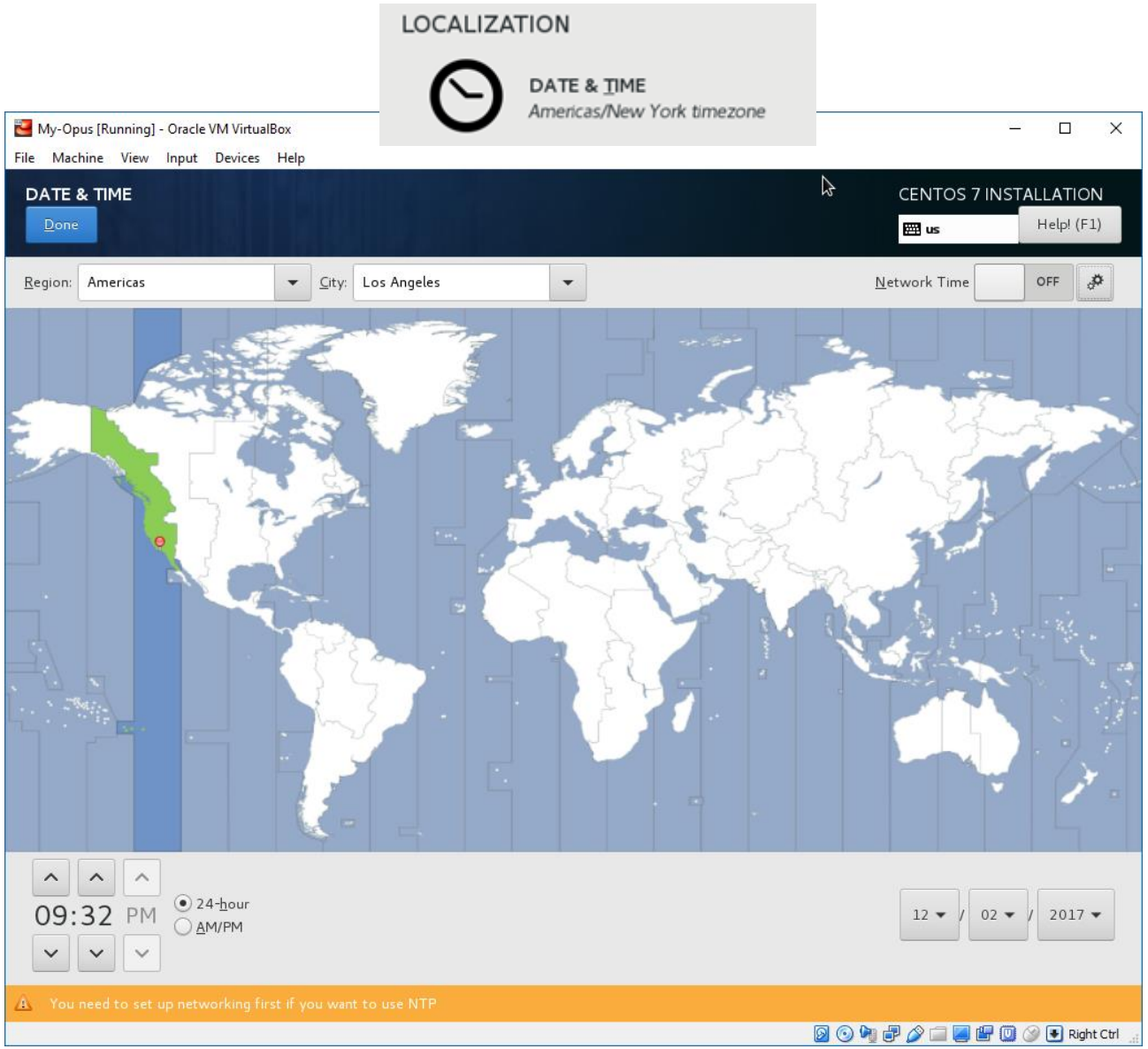


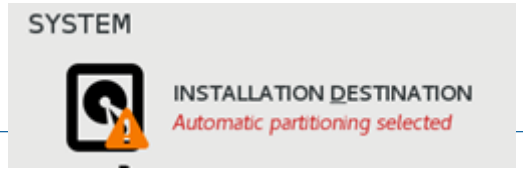
Allow "Capture" of the mouse by the VM. Use right Ctrl to release if needed.

Select and enter Install CentOS 7


My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CentOS
CENTOS 7 INSTALLATION
us
Help! (F1)
WELCOME TO CENTOS 7.
What language would you like to use during the installation process?
English English
Afrikaans Afrikaans
አማርኛ Amharic
العربية Arabic
অসমীয়া Assamese
Asturianu Asturian
Беларуская Belarusian
Български Bulgarian
বাংলা Bengali
Bosanski Bosnian
Català Catalan
Čeština Czech
Cymraeg Welsh
Dansk Danish
Deutsch German
English (United States)
English (United Kingdom)
English (India)
English (Australia)
English (Canada)
English (Denmark)
English (Ireland)
English (New Zealand)
English (Nigeria)
English (Hong Kong SAR China)
English (Philippines)
English (Singapore)
English (South Africa)
English (Zambia)
English (Zimbabwe)
English (Botswana)
English (Antigua & Barbuda)
Quit
Continue
Right Ctrl


My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CentOS
INSTALLATION SUMMARY
CENTOS 7 INSTALLATION
us
Help! (F1)
LOCALIZATION
DATE & TIME
Americas/New York timezone
KEYBOARD
English (US)
LANGUAGE SUPPORT
English (United States)
SOFTWARE
INSTALLATION SOURCE
Local media
SOFTWARE SELECTION
Minimal Install
SYSTEM
INSTALLATION DESTINATION
Automatic partitioning selected
KDUMP
Kdump is enabled
NETWORK & HOST NAME
Not connected
SECURITY POLICY
No profile selected
Quit
Begin Installation
We won't touch your disks until you click 'Begin Installation'.
Please complete items marked with this icon before continuing to the next step.
Right Ctrl


LOCALIZATION
DATE & TIME
Americas/New York timezone
My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
DATE & TIME
Done
CENTOS 7 INSTALLATION
us
Help! (F1)
Region: Americas
City: Los Angeles
Network Time
OFF
09:32 PM
24-hour
AM/PM
12 / 02 / 2017
You need to set up networking first if you want to use NTP
Right Ctrl



My-Opus [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

INSTALLATION DESTINATION

Done

CENTOS 7 INSTALLATION

us

Help! (F1)

Device Selection

Select the device(s) you'd like to install to. They will be left untouched until you click on the main menu's "Begin Installation" button.

Local Standard Disks

8192 MiB

ATA VBOX HARDDISK

sda / 8192 MiB free

Disks left unselected here will not be touched.

Specialized & Network Disks

Add a disk...

Disks left unselected here will not be touched.

Other Storage Options

Partitioning

(•) Automatically configure partitioning. ( ) I will configure partitioning.

[ ] I would like to make additional space available.

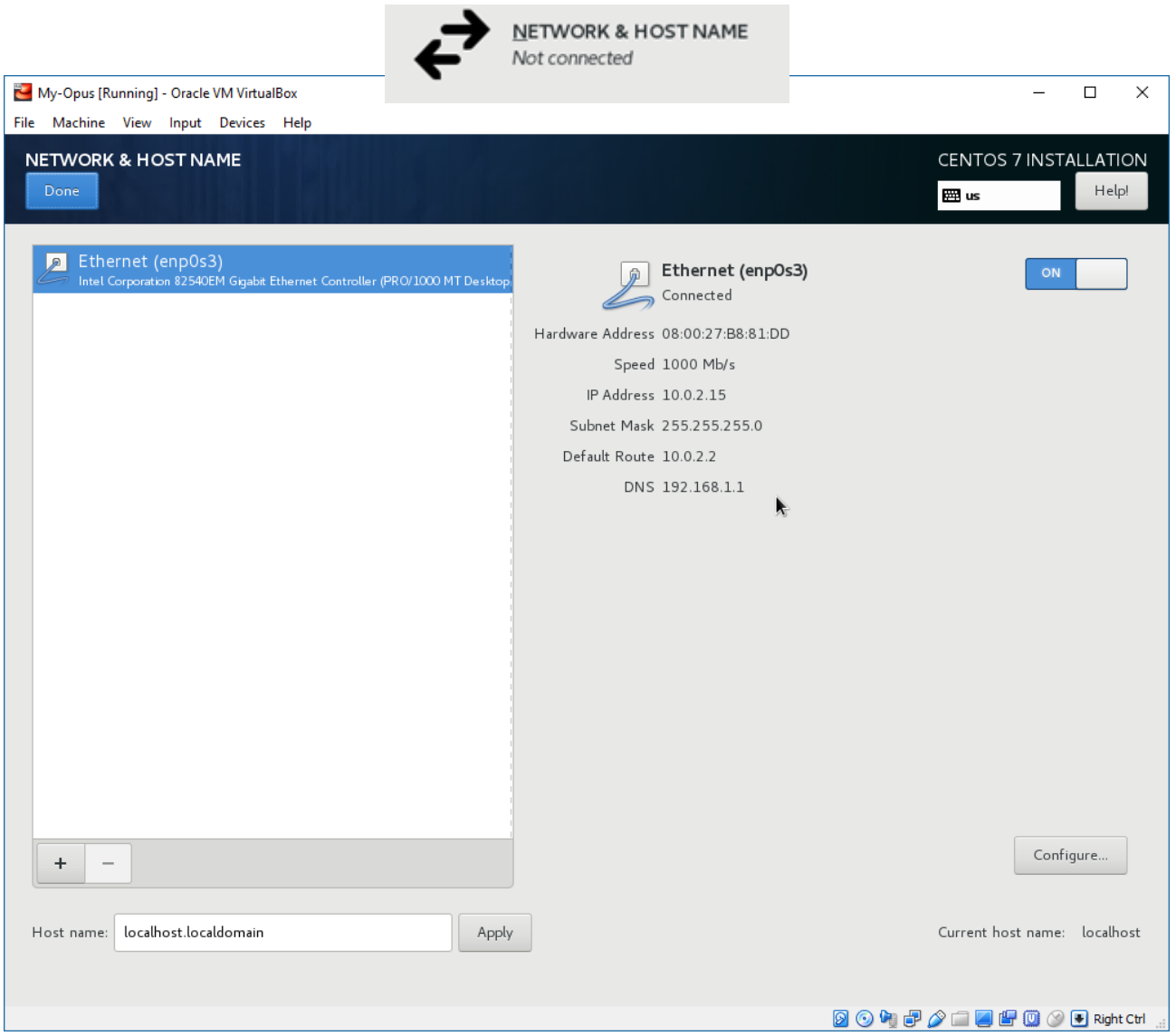
Encryption

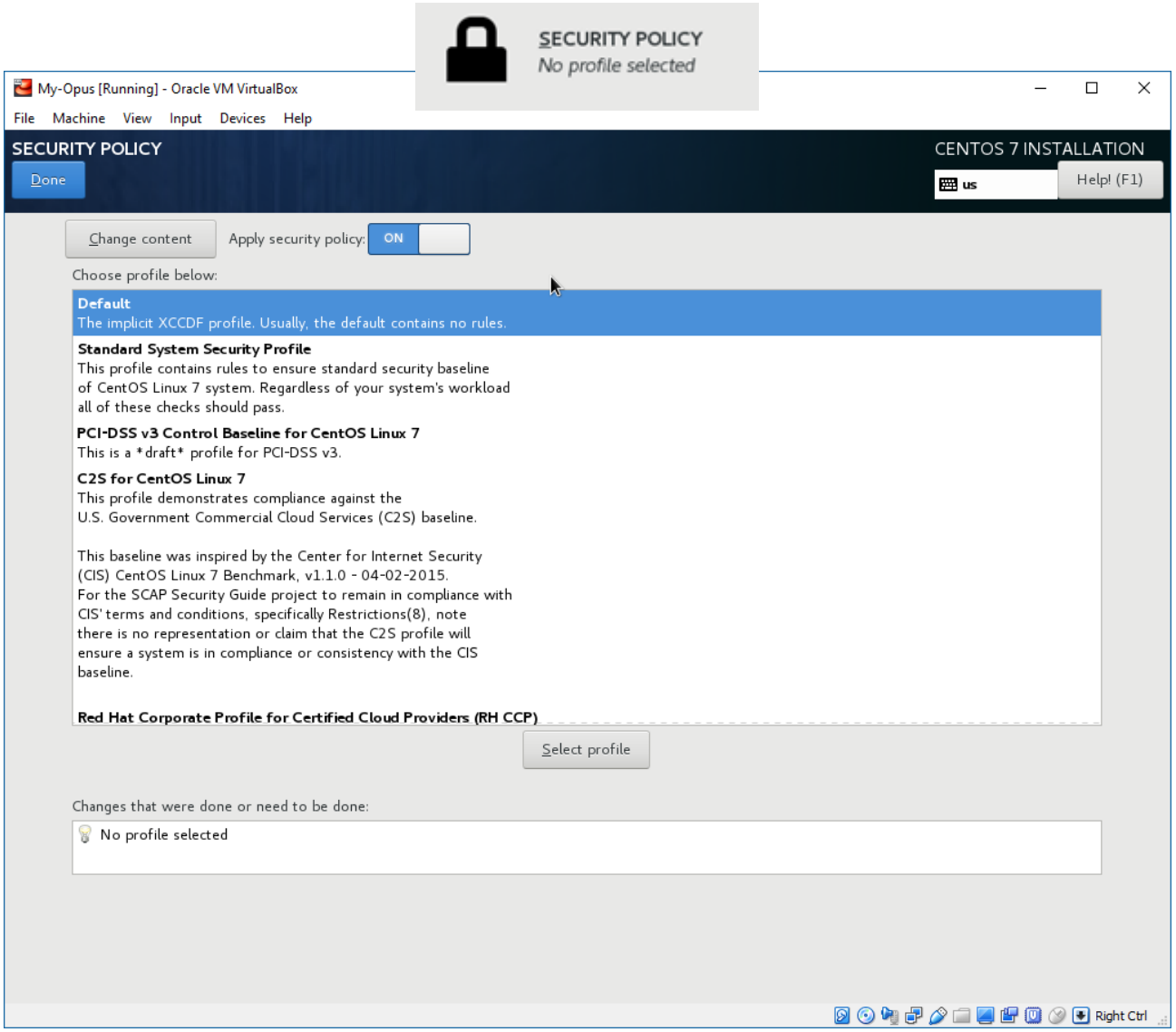
[ ] Encrypt my data. *You'll set a passphrase next.*

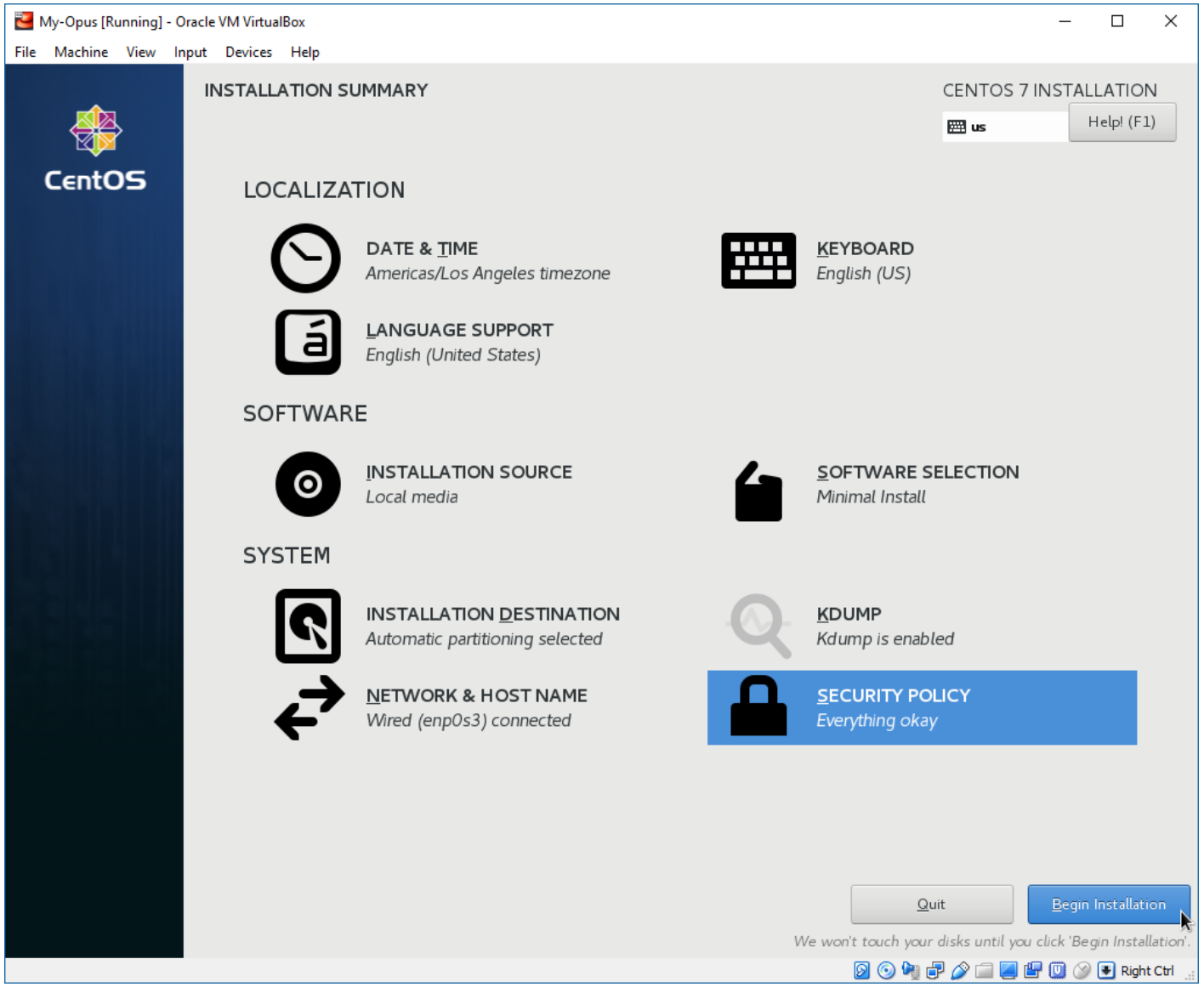
Full disk summary and boot loader...

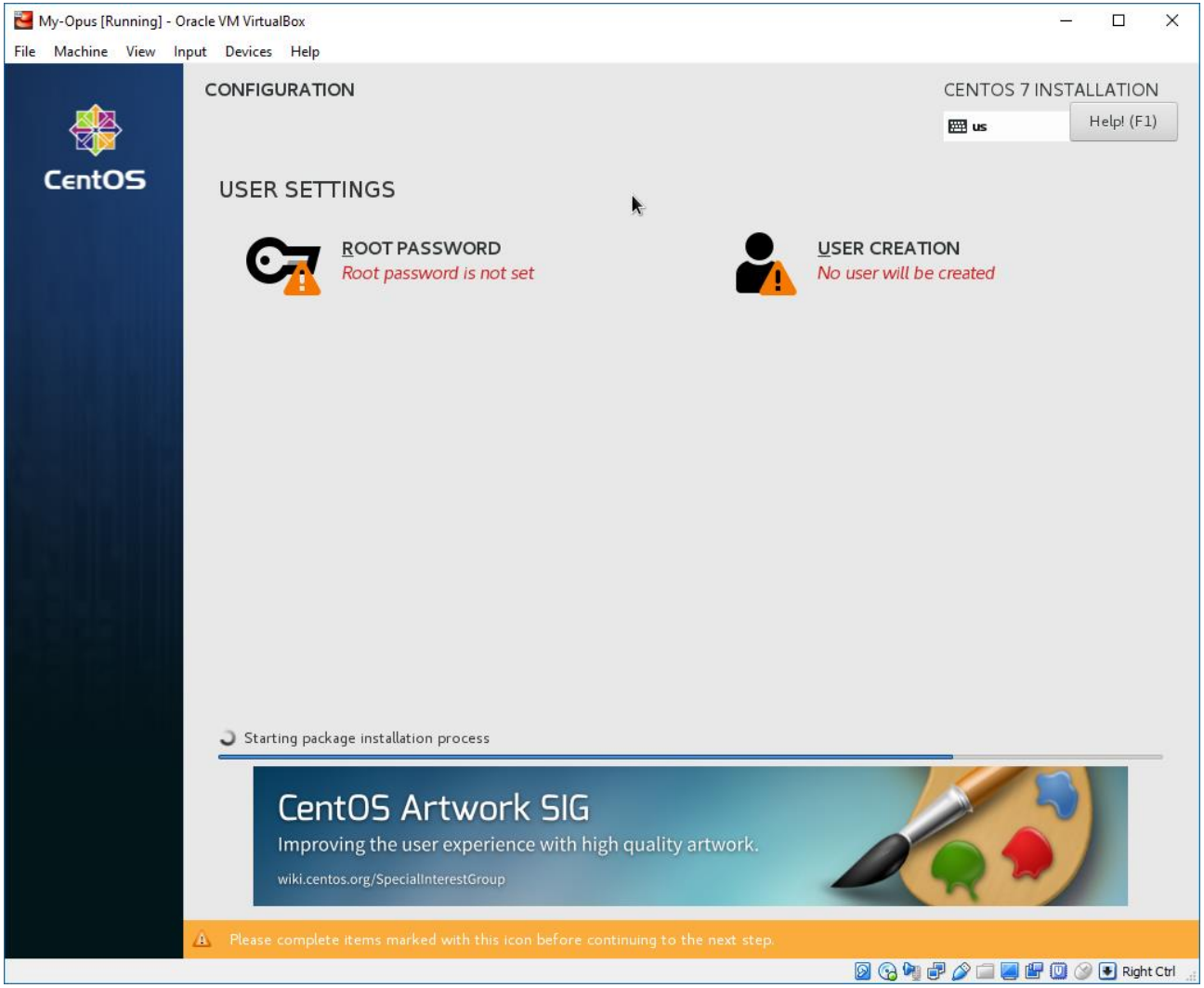
1 disk selected; 8192 MiB capacity; 8192 MiB free Refresh...

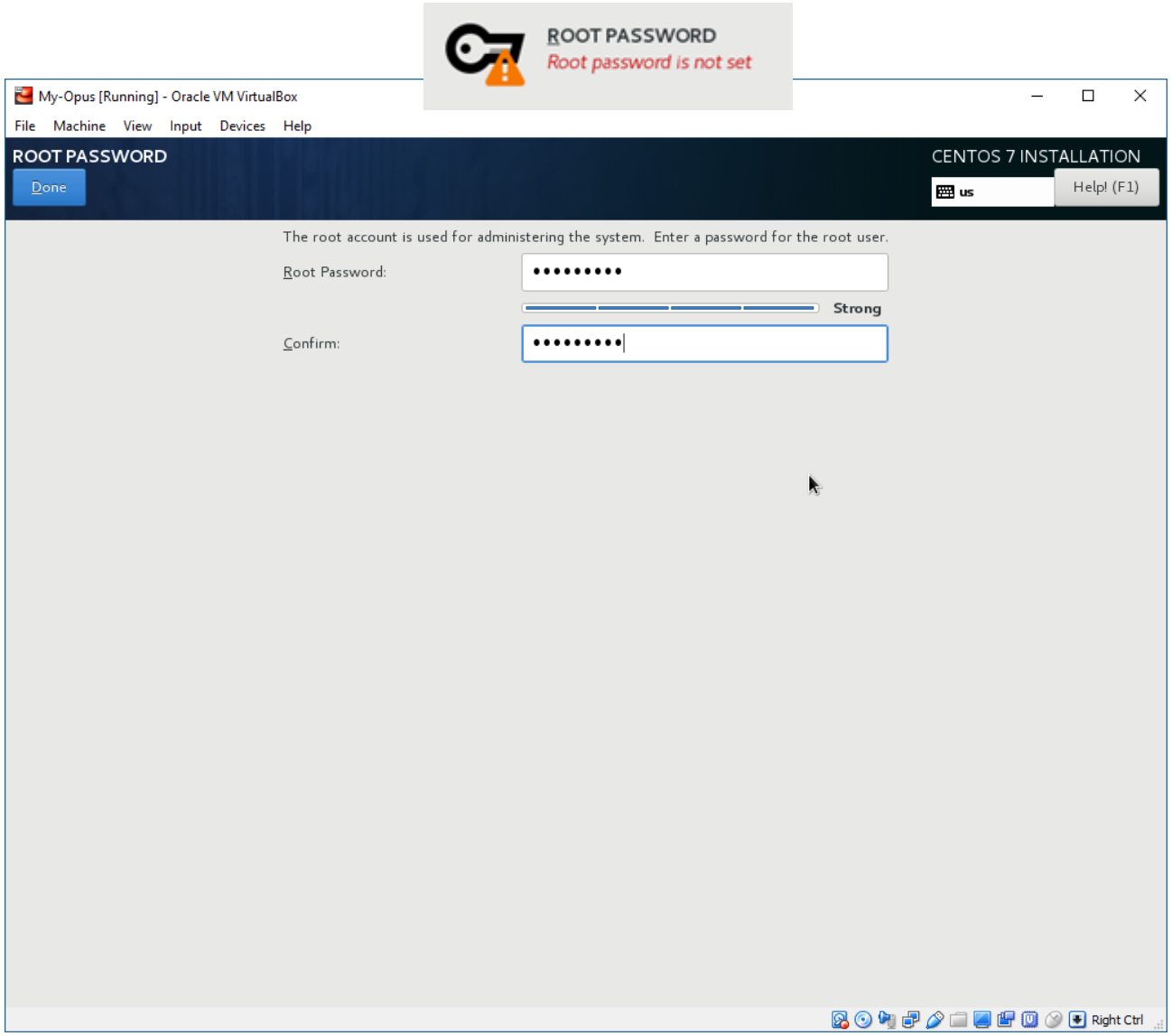
Right Ctrl

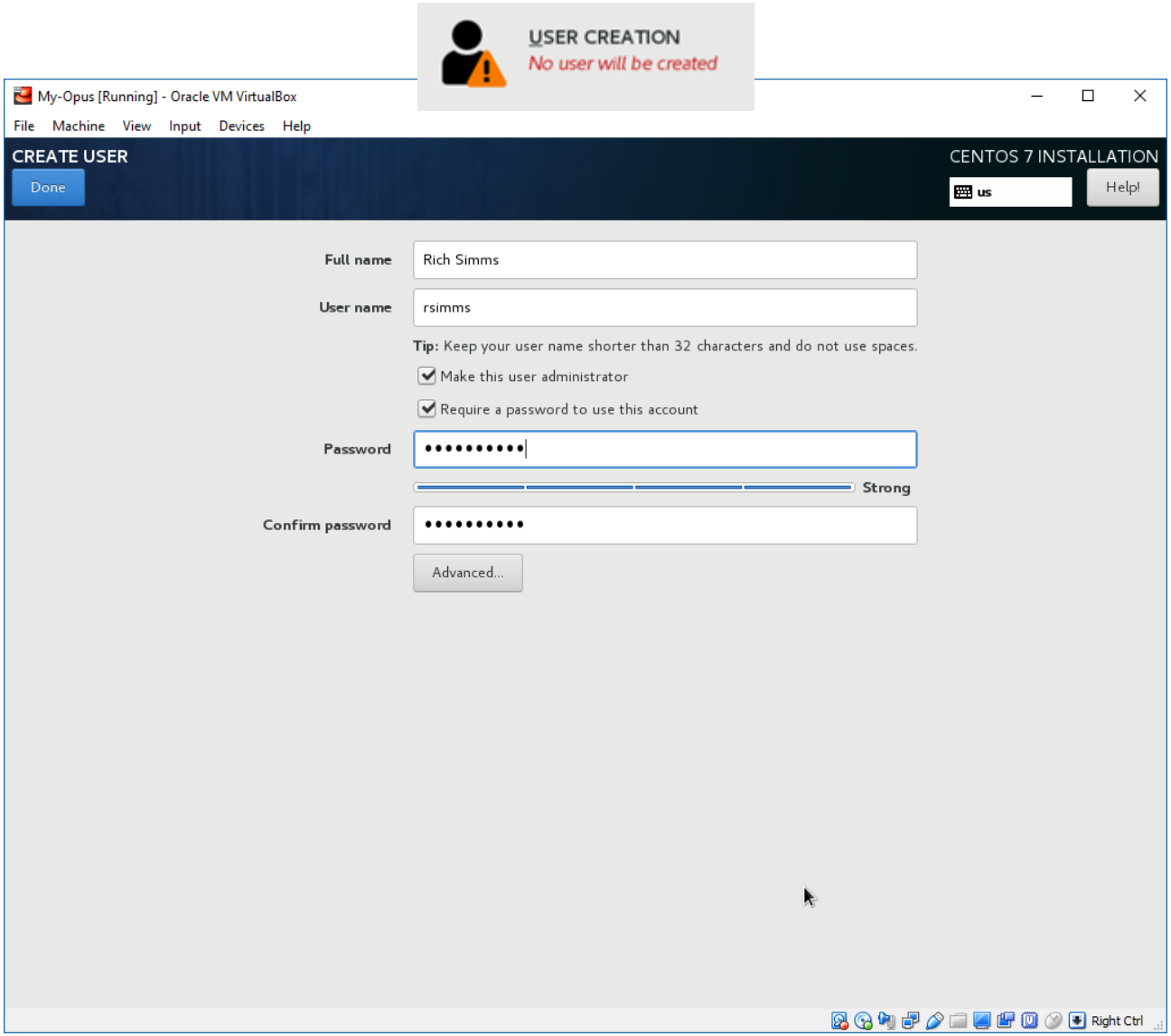

NETWORK & HOST NAME
Not connected
My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
NETWORK & HOST NAME
Done
CENTOS 7 INSTALLATION
us
Help!
Ethernet (enp0s3)
Intel Corporation 82540EM Gigabit Ethernet Controller (PRO/1000 MT Desktop
Ethernet (enp0s3)
Connected
ON
Hardware Address 08:00:27:B8:81:DD
Speed 1000 Mb/s
IP Address 10.0.2.15
Subnet Mask 255.255.255.0
Default Route 10.0.2.2
DNS 192.168.1.1
Configure...
Host name: localhost.localdomain
Apply
Current host name: localhost
Right Ctrl

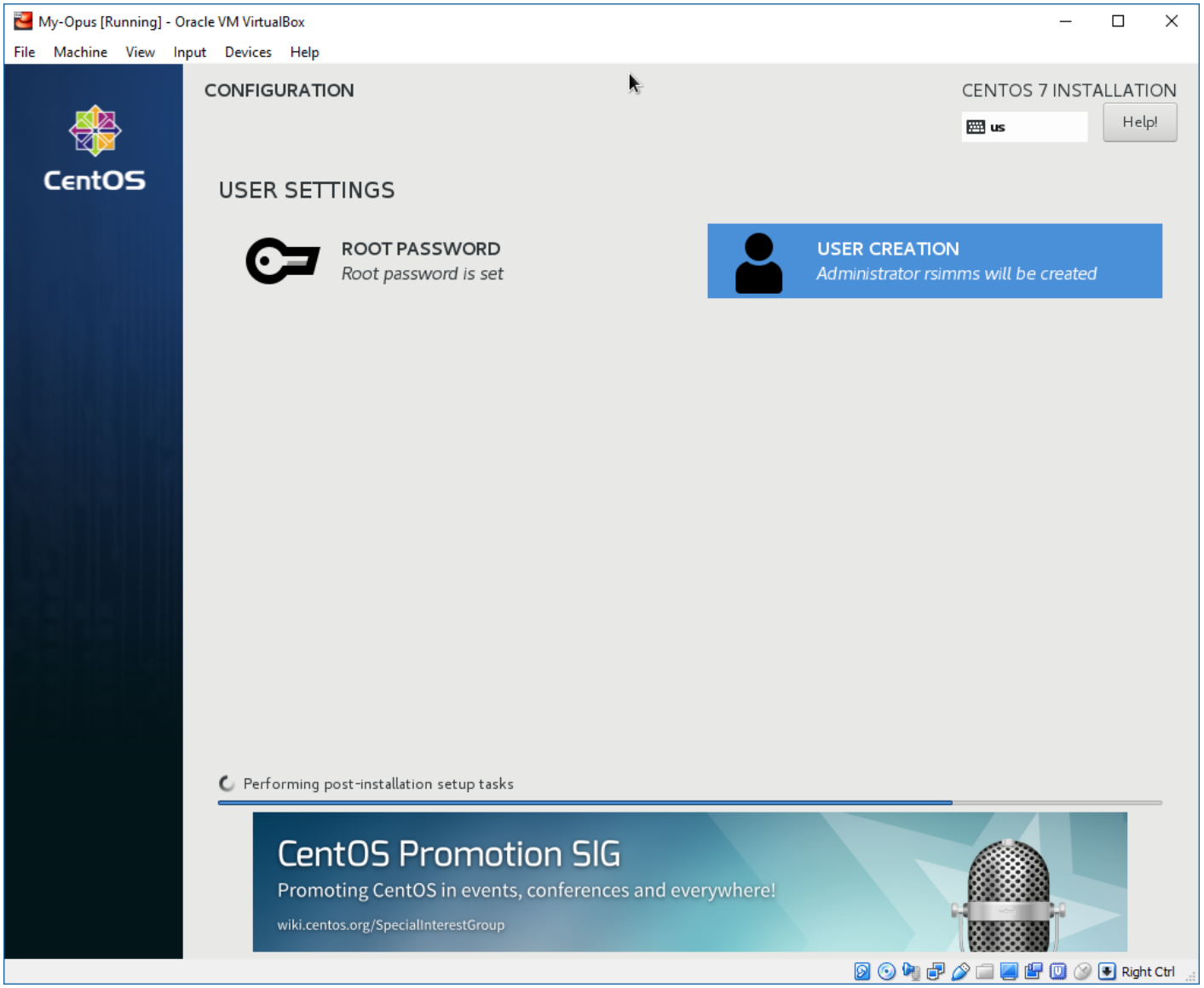

SECURITY POLICY
No profile selected
My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
SECURITY POLICY
Done
CENTOS 7 INSTALLATION
us
Help! (F1)
Change content
Apply security policy:
ON
Choose profile below:
Default
The implicit XCCDF profile. Usually, the default contains no rules.
Standard System Security Profile
This profile contains rules to ensure standard security baseline of CentOS Linux 7 system. Regardless of your system's workload all of these checks should pass.
PCI-DSS v3 Control Baseline for CentOS Linux 7
This is a *draft* profile for PCI-DSS v3.
C2S for CentOS Linux 7
This profile demonstrates compliance against the U.S. Government Commercial Cloud Services (C2S) baseline.
This baseline was inspired by the Center for Internet Security (CIS) CentOS Linux 7 Benchmark, v1.1.0 - 04-02-2015.
For the SCAP Security Guide project to remain in compliance with CIS' terms and conditions, specifically Restrictions(8), note there is no representation or claim that the C2S profile will ensure a system is in compliance or consistency with the CIS baseline.
Red Hat Corporate Profile for Certified Cloud Providers (RH CCP)
Select profile
Changes that were done or need to be done:
No profile selected
Right Ctrl

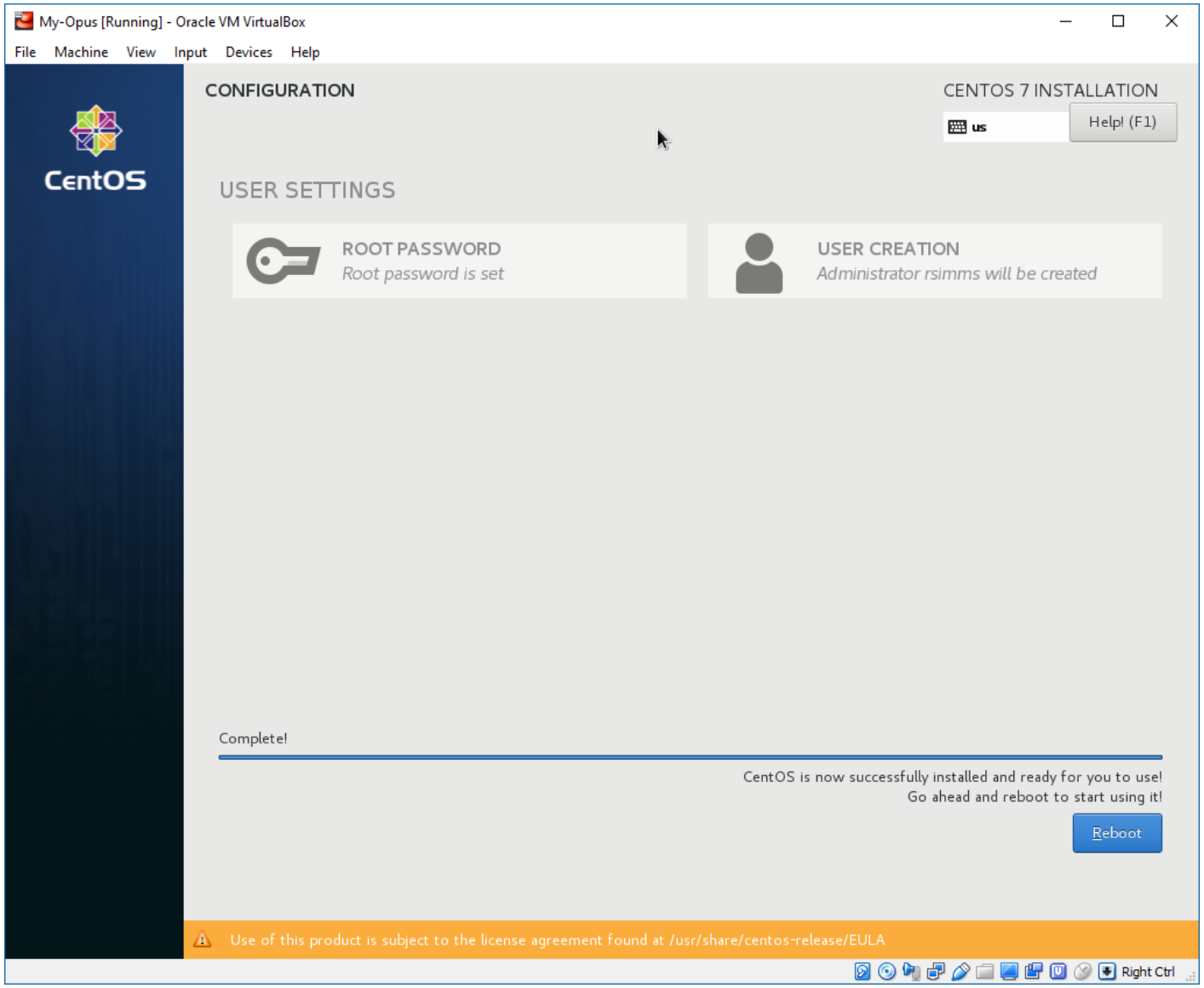

My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CentOS
INSTALLATION SUMMARY
CENTOS 7 INSTALLATION
us
Help! (F1)
LOCALIZATION
DATE & TIME
Americas/Los Angeles timezone
KEYBOARD
English (US)
LANGUAGE SUPPORT
English (United States)
SOFTWARE
INSTALLATION SOURCE
Local media
SOFTWARE SELECTION
Minimal Install
SYSTEM
INSTALLATION DESTINATION
Automatic partitioning selected
KDUMP
Kdump is enabled
NETWORK & HOST NAME
Wired (enp0s3) connected
SECURITY POLICY
Everything okay
Quit
Begin Installation
We won't touch your disks until you click 'Begin Installation'.
Right Ctrl

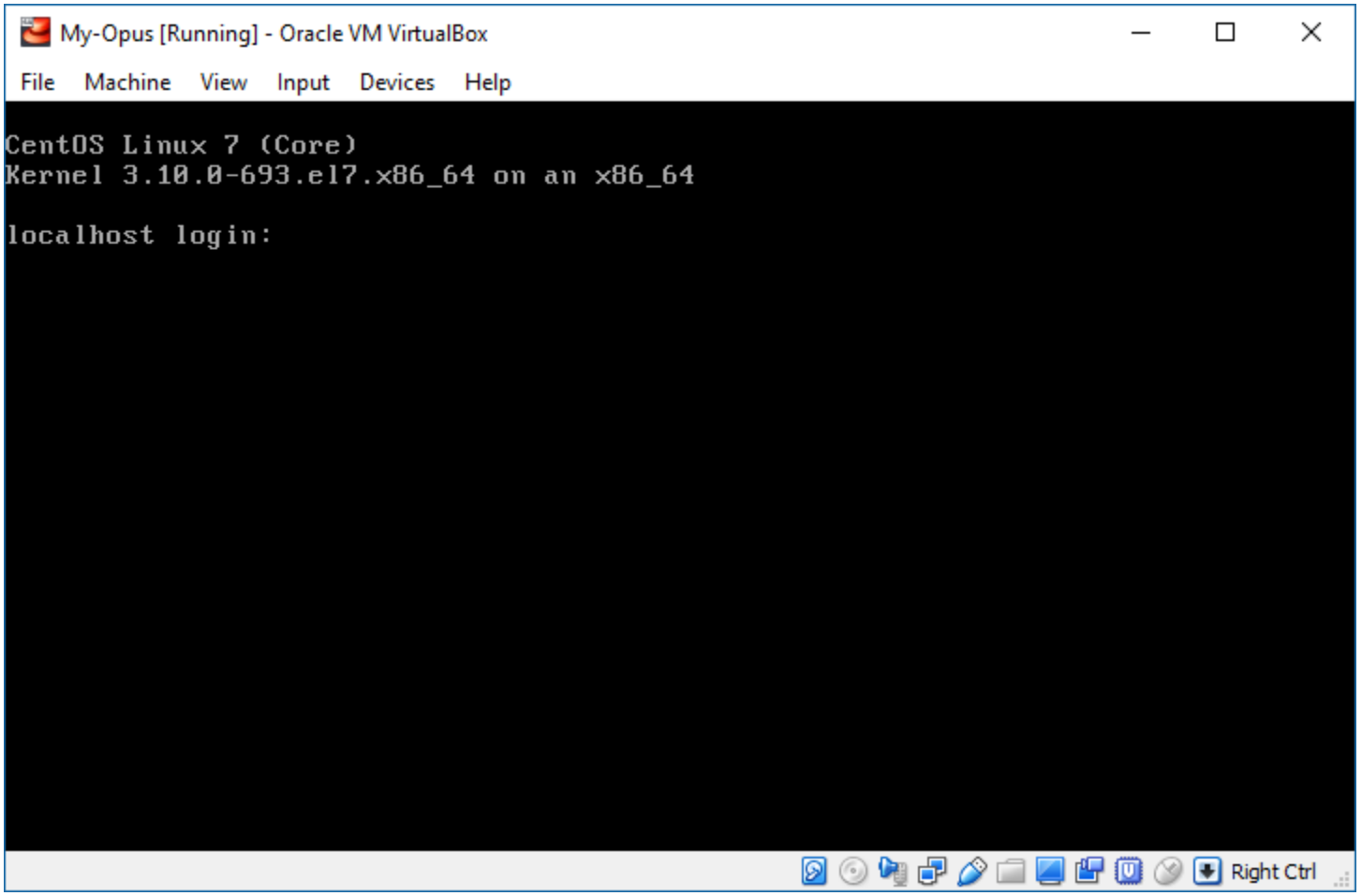

My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CentOS
CONFIGURATION
CENTOS 7 INSTALLATION
us
Help! (F1)
USER SETTINGS
ROOT PASSWORD
Root password is not set
USER CREATION
No user will be created
Starting package installation process
CentOS Artwork SIG
Improving the user experience with high quality artwork.
wiki.centos.org/SpecialInterestGroup
Please complete items marked with this icon before continuing to the next step.
Right Ctrl


ROOT PASSWORD
Root password is not set
My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
ROOT PASSWORD
Done
CENTOS 7 INSTALLATION
us
Help! (F1)
The root account is used for administering the system. Enter a password for the root user.
Root Password:
Strong
Confirm:
Right Ctrl

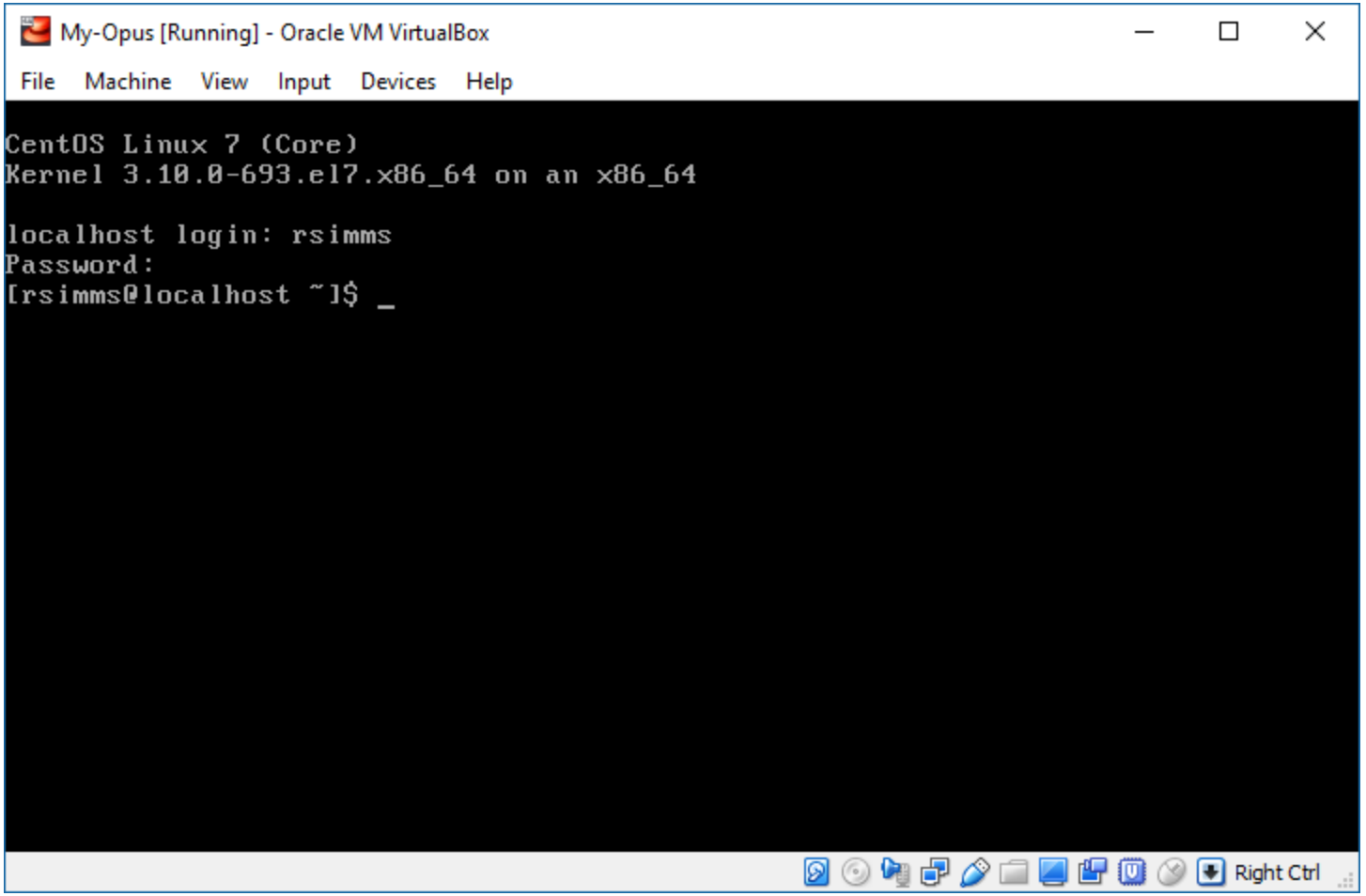

USER CREATION
No user will be created
My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CREATE USER
Done
CENTOS 7 INSTALLATION
us
Help!
Full name
Rich Simms
User name
rsimms
Tip: Keep your user name shorter than 32 characters and do not use spaces.
Make this user administrator
Require a password to use this account
Password
Strong
Confirm password
Advanced...
Right Ctrl


My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CentOS
CONFIGURATION
CENTOS 7 INSTALLATION
us
Help!
USER SETTINGS
ROOT PASSWORD
Root password is set
USER CREATION
Administrator rsimms will be created
Performing post-installation setup tasks
CentOS Promotion SIG
Promoting CentOS in events, conferences and everywhere!
wiki.centos.org/SpecialInterestGroup
Right Ctrl


My-Opus [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CentOS
CONFIGURATION
CENTOS 7 INSTALLATION
us
Help! (F1)
USER SETTINGS
ROOT PASSWORD
Root password is set
USER CREATION
Administrator rsimms will be created
Complete!
CentOS is now successfully installed and ready for you to use!
Go ahead and reboot to start using it!
Reboot
Use of this product is subject to the license agreement found at /usr/share/centos-release/EULA
Right Ctrl

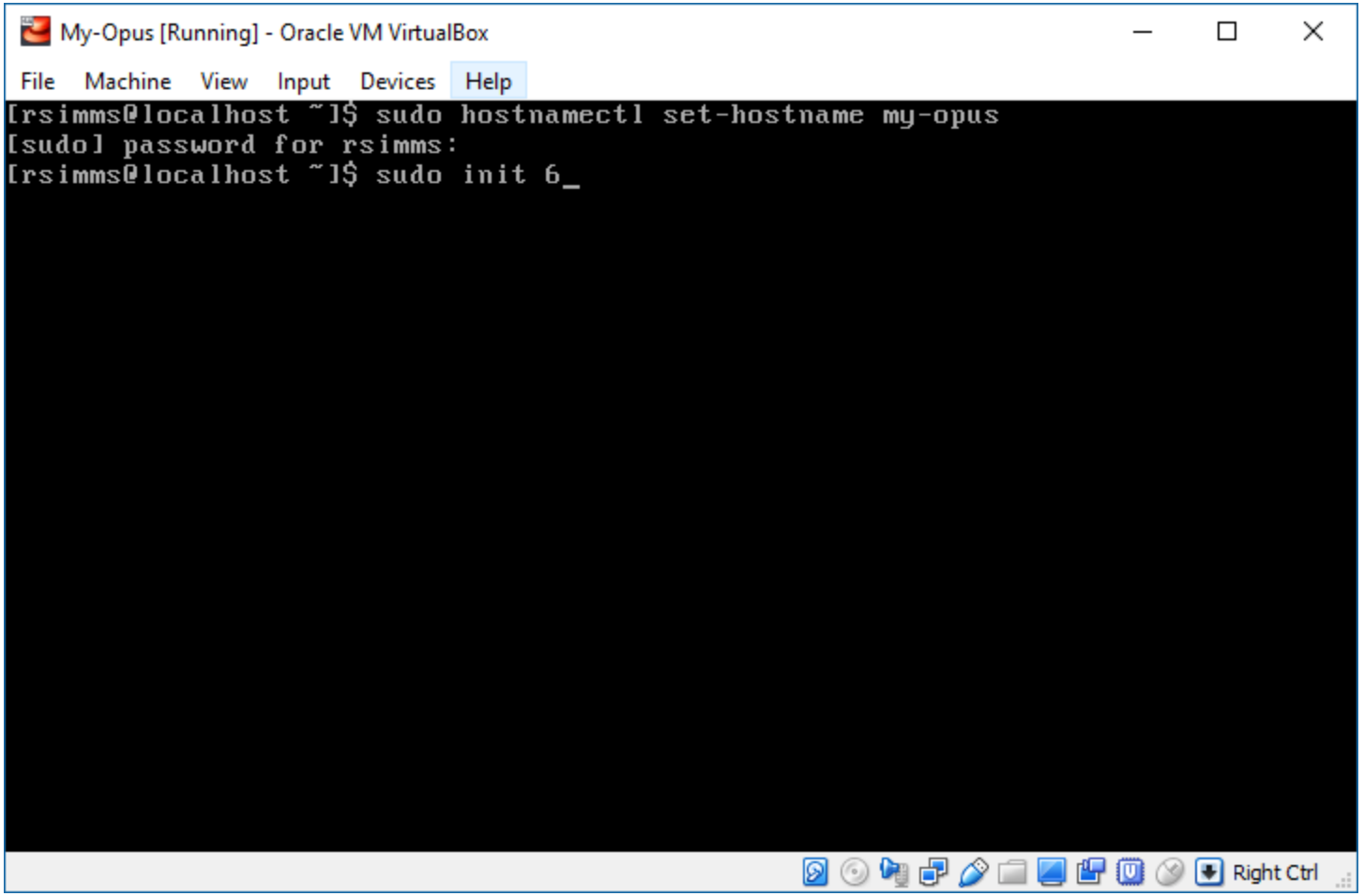


Login to your new Linux computer



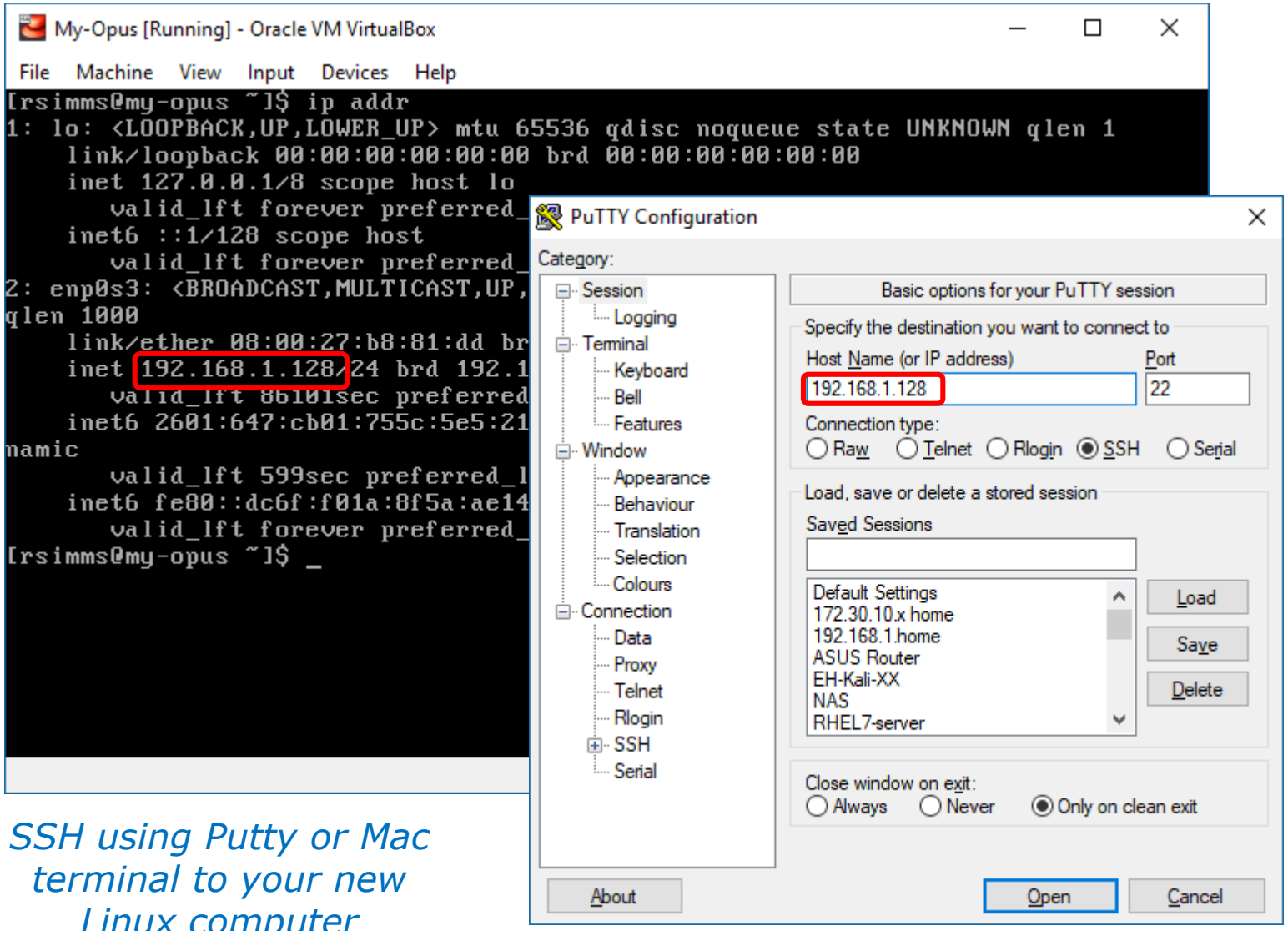
Logged in and ready to go

sudo hostnamectl set-hostname my-opus
sudo init 6

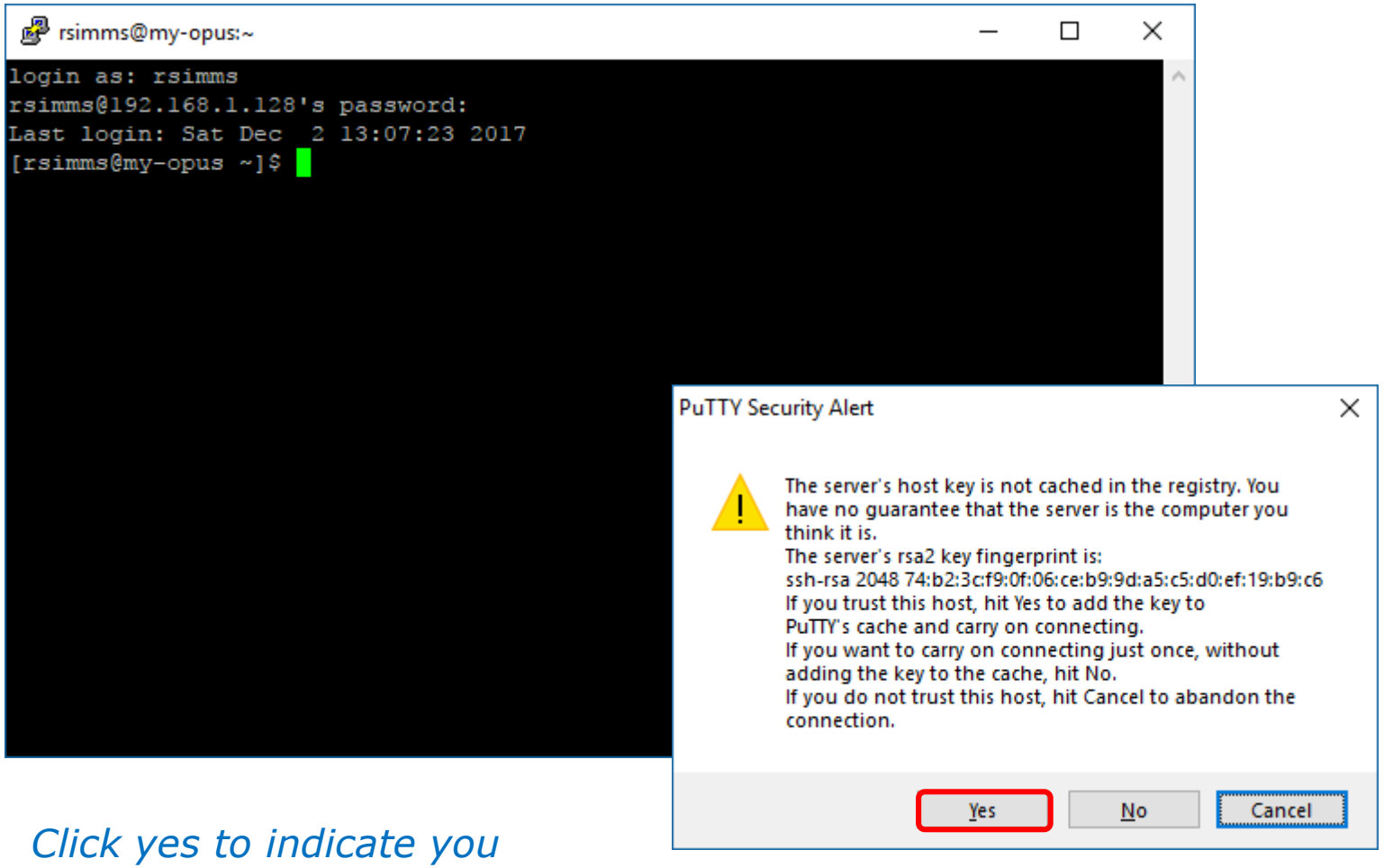


Set the hostname and reboot

ipaddr

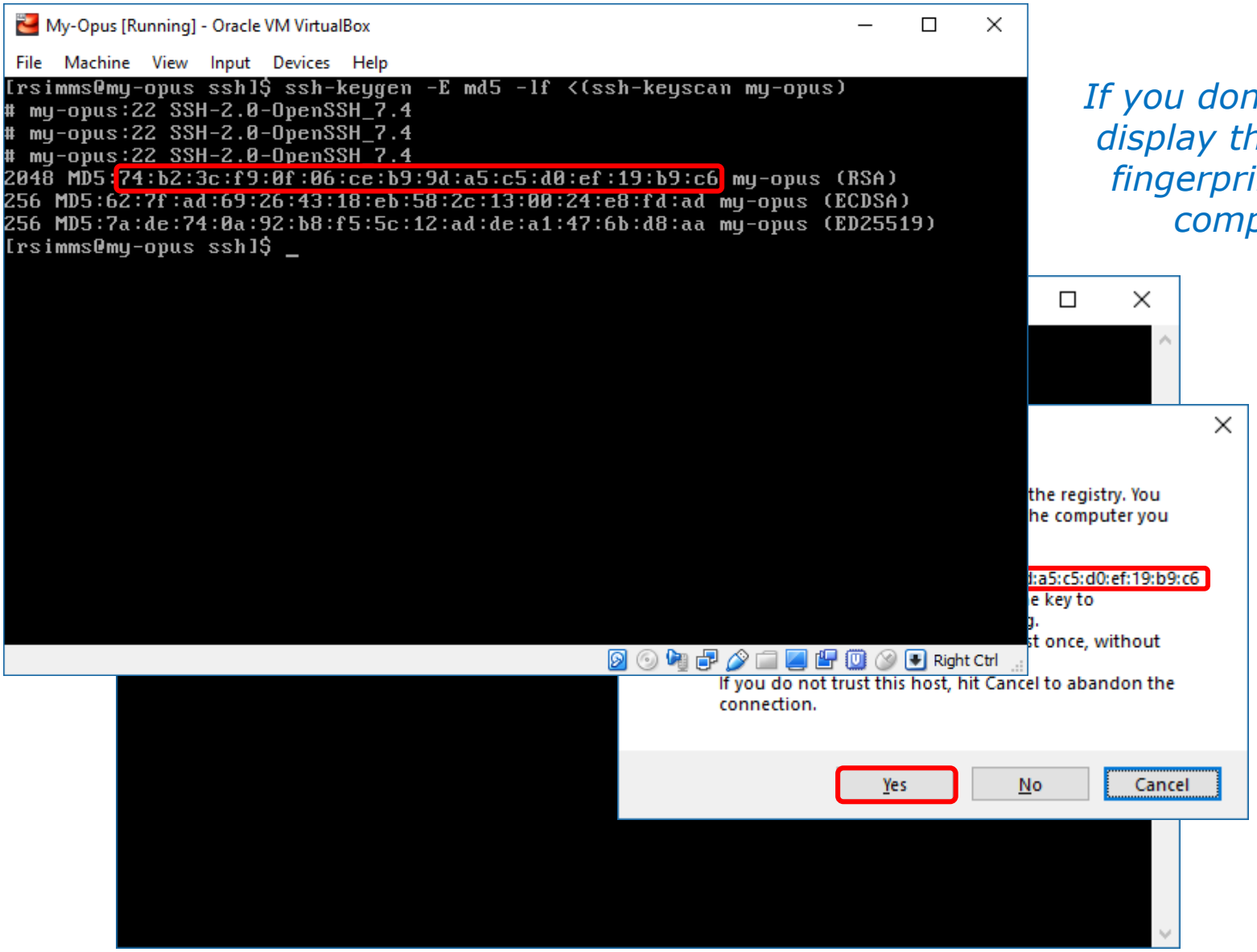


SSH using Putty or Mac terminal to your new Linux computer



Click yes to indicate you trust the computer you are about to connect to

ssh-keygen -E md5 -lr <(ssh-key-scan my-opus)



If you don't trust it display the actual fingerprints and compare

sudo yum install httpd
y
y

```
rsimms@my-opus:~
[rsimms@my-opus ~]$ sudo yum install httpd
[sudo] password for rsimms:
Loaded plugins: fastestmirror
base                                                     | 3.6 kB     00:00
extras                                                   | 3.4 kB     00:00
updates                                                  | 3.4 kB     00:00
(1/4): base/7/x86_64/group_gz                              | 156 kB   00:00
(2/4): extras/7/x86_64/primary_db                          | 130 kB   00:00
(3/4): base/7/x86_64/primary_db                            | 5.7 MB   00:01
(4/4): updates/7/x86_64/primary_db                         | 3.6 MB   00:01
Determining fastest mirrors
 * base: mirror.sjc02.svwh.net
 * extras: mirror.sjc02.svwh.net
 * updates: mirror.sjc02.svwh.net
Resolving Dependencies
--> Running transaction check
---> Package httpd.x86_64 0:2.4.6-67.el7.centos.6 will be installed
--> Processing Dependency: httpd-tools = 2.4.6-67.el7.centos.6 for package: http
d-2.4.6-67.el7.centos.6.x86_64
--> Processing Dependency: /etc/mime.types for package: httpd-2.4.6-67.el7.cento
s.6.x86_64
--> Processing Dependency: libaprutil-1.so.0()(64bit) for package: httpd-2.4.6-6
7.el7.centos.6.x86_64
--> Processing Dependency: libapr-1.so.0()(64bit) for package: httpd-2.4.6-67.el
7.centos.6.x86_64
--> Running transaction check
---> Package apr.x86_64 0:1.4.8-3.el7_4.1 will be installed
---> Package apr-util.x86_64 0:1.5.2-6.el7 will be installed
---> Package httpd-tools.x86_64 0:2.4.6-67.el7.centos.6 will be installed
---> Package mailcap.noarch 0:2.1.41-2.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package           Arch         Version                     Repository     Size
================================================================================
Installing:
 httpd             x86_64       2.4.6-67.el7.centos.6       updates       2.7 M
Installing for dependencies:
 apr               x86_64       1.4.8-3.el7_4.1             updates       103 k
 apr-util          x86_64       1.5.2-6.el7                 base           92 k
 httpd-tools       x86_64       2.4.6-67.el7.centos.6       updates        88 k
 mailcap           noarch       2.1.41-2.el7                base           31 k

Transaction Summary
================================================================================
Install  1 Package (+4 Dependent packages)

Total download size: 3.0 M
Installed size: 10 M
Is this ok [y/d/N]:
```

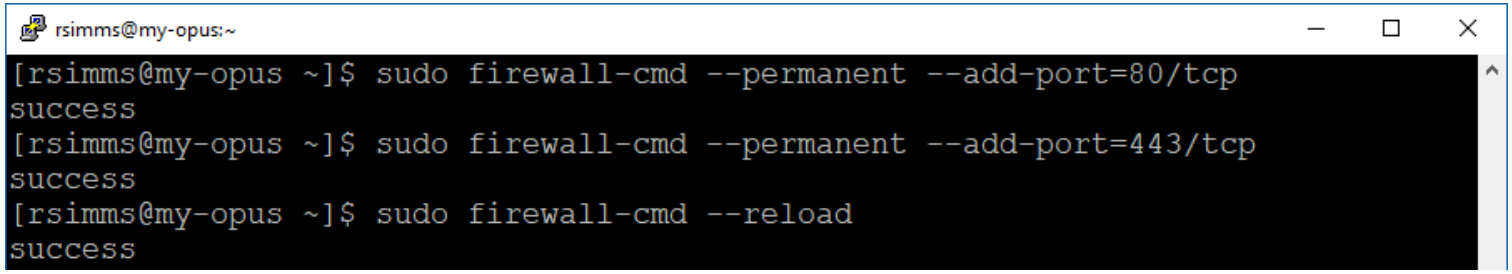
```
rsimms@my-opus:~
Total download size: 3.0 M
Installed size: 10 M
Is this ok [y/d/N]: y
Downloading packages:
warning: /var/cache/yum/x86_64/7/base/packages/mailcap-2.1.41-2.el7.noarch.rpm:
Header V3 RSA/SHA256 Signature, key ID f4a80eb5: NOKEY
Public key for mailcap-2.1.41-2.el7.noarch.rpm is not installed
(1/5): mailcap-2.1.41-2.el7.noarch.rpm                     |  31 kB   00:00
Public key for httpd-tools-2.4.6-67.el7.centos.6.x86_64.rpm is not installed
(2/5): httpd-tools-2.4.6-67.el7.centos.6.x86_64.rpm        |  88 kB   00:00
(3/5): apr-util-1.5.2-6.el7.x86_64.rpm                     |  92 kB   00:00
(4/5): apr-1.4.8-3.el7_4.1.x86_64.rpm                      | 103 kB   00:00
(5/5): httpd-2.4.6-67.el7.centos.6.x86_64.rpm              | 2.7 MB   00:01
--------------------------------------------------------------------------------
Total                                          2.6 MB/s | 3.0 MB  00:01
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Importing GPG key 0xF4A80EB5:
 Userid     : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org
>"
 Fingerprint: 6341 ab27 53d7 8a78 a7c2 7bb1 24c6 a8a7 f4a8 0eb5
 Package    : centos-release-7-4.1708.el7.centos.x86_64 (@anaconda)
 From       : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Is this ok [y/N]: y
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : apr-1.4.8-3.el7_4.1.x86_64                                   1/5
  Installing : apr-util-1.5.2-6.el7.x86_64                                  2/5
  Installing : httpd-tools-2.4.6-67.el7.centos.6.x86_64                     3/5
  Installing : mailcap-2.1.41-2.el7.noarch                                  4/5
  Installing : httpd-2.4.6-67.el7.centos.6.x86_64                           5/5
  Verifying  : mailcap-2.1.41-2.el7.noarch                                  1/5
  Verifying  : httpd-2.4.6-67.el7.centos.6.x86_64                           2/5
  Verifying  : apr-util-1.5.2-6.el7.x86_64                                  3/5
  Verifying  : apr-1.4.8-3.el7_4.1.x86_64                                   4/5
  Verifying  : httpd-tools-2.4.6-67.el7.centos.6.x86_64                     5/5

Installed:
  httpd.x86_64 0:2.4.6-67.el7.centos.6

Dependency Installed:
  apr.x86_64 0:1.4.8-3.el7_4.1                 apr-util.x86_64 0:1.5.2-6.el7
  httpd-tools.x86_64 0:2.4.6-67.el7.centos.6   mailcap.noarch 0:2.1.41-2.el7

Complete!
[rsimms@my-opus ~]$
```

sudo firewall-cmd --permanent --add-port=80/tcp
sudo firewall-cmd --permanent --add-port=443/tcp
sudo firewall-cmd --reload



Poke holes in the firewall for ports 80 (HTTP) and 443 (HTTPS). This allows remote users access to your Apache web server

sudo systemctl start httpd
sudo systemctl enable httpd
sudo systemctl status httpd

```
[rsimms@my-opus ~]$ sudo systemctl start httpd
[rsimms@my-opus ~]$ sudo systemctl enable httpd
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service t
o /usr/lib/systemd/system/httpd.service.
[rsimms@my-opus ~]$ sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset
: disabled)
   Active: active (running) since Sat 2017-12-02 13:24:19 PST; 16s ago
     Docs: man:httpd(8)
           man:apachectl(8)
 Main PID: 1265 (httpd)
   Status: "Total requests: 0; Current requests/sec: 0; Current traffic:   0 B/s
ec"
   CGroup: /system.slice/httpd.service
           ├─1265 /usr/sbin/httpd -DFOREGROUND
           ├─1266 /usr/sbin/httpd -DFOREGROUND
           ├─1267 /usr/sbin/httpd -DFOREGROUND
           ├─1268 /usr/sbin/httpd -DFOREGROUND
           ├─1269 /usr/sbin/httpd -DFOREGROUND
           └─1270 /usr/sbin/httpd -DFOREGROUND

Dec 02 13:24:19 my-opus systemd[1]: Starting The Apache HTTP Server...
Dec 02 13:24:19 my-opus httpd[1265]: AH00558: httpd: Could not reliably det...ge
Dec 02 13:24:19 my-opus systemd[1]: Started The Apache HTTP Server.
Hint: Some lines were ellipsized, use -l to show in full.
[rsimms@my-opus ~]$
```

Start Apache and enable it to start automatically at boot

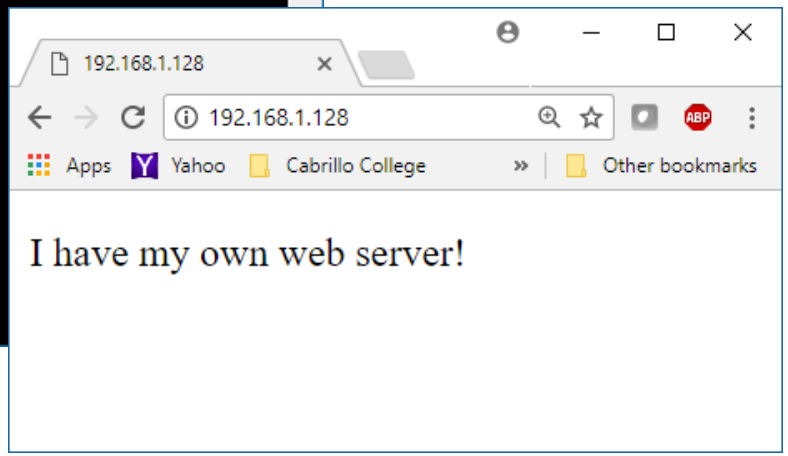
sudo vi /var/www/html/index.html
cat /var/www/html/index.html

```
rsimms@my-opus:~
[rsimms@my-opus ~]$ sudo vi /var/www/html/index.html
[rsimms@my-opus ~]$ cat /var/www/html/index.html
<!DOCTYPE html>
<html>
<body>

<p>I have my own web server!</p>

</body>
</html>
[rsimms@my-opus ~]$
```

Browse to your VM



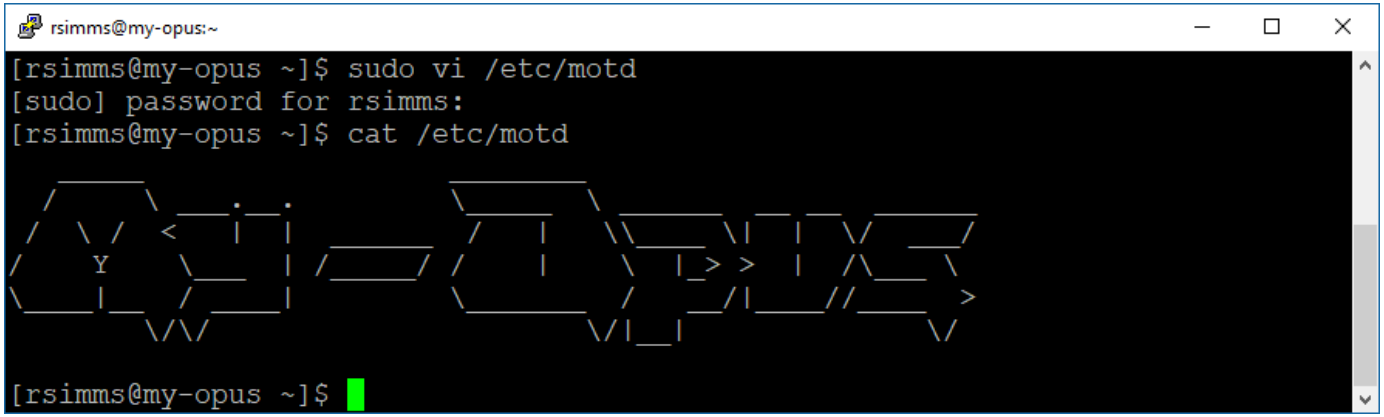
<!DOCTYPE html>
<html>
<body>

** I have my own web server! **

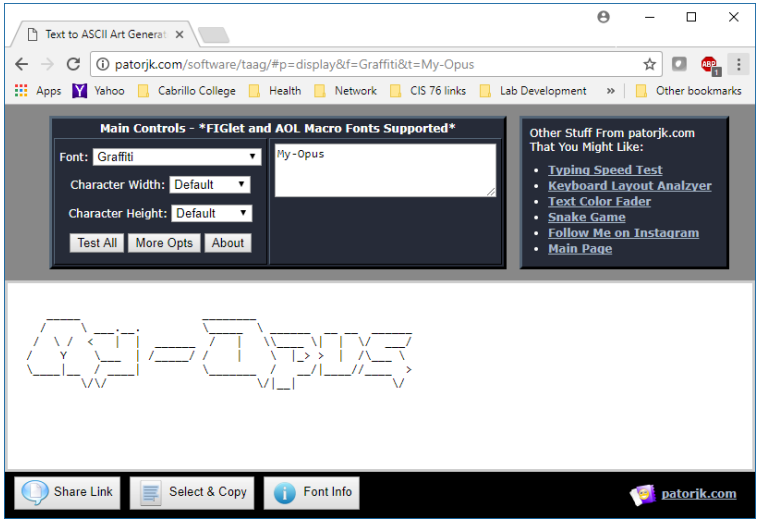
</body>
</html>

Make a little web page named index.html

sudo vi /etc/motd

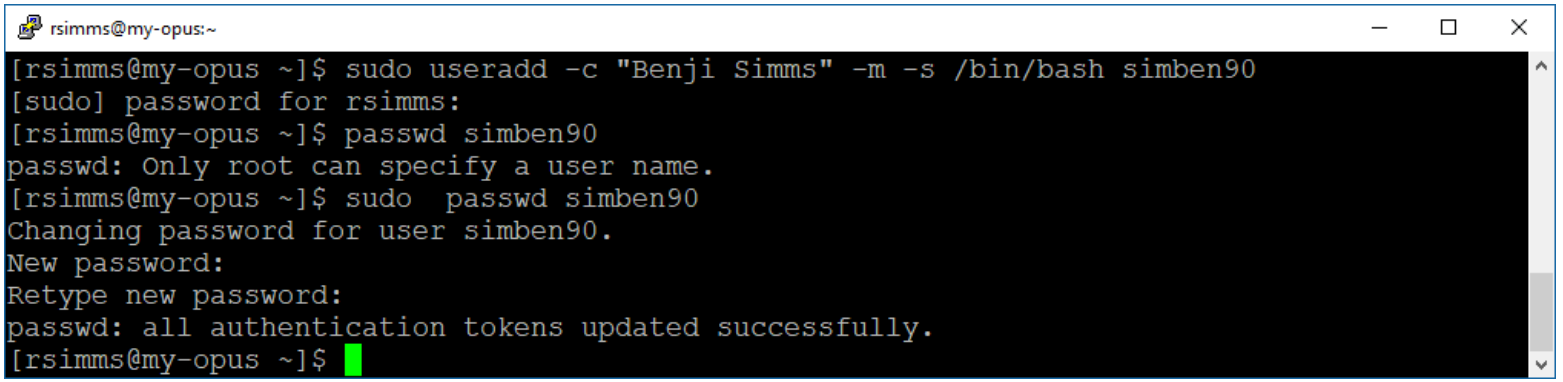


Make your MOTD
(Message of the Day) file

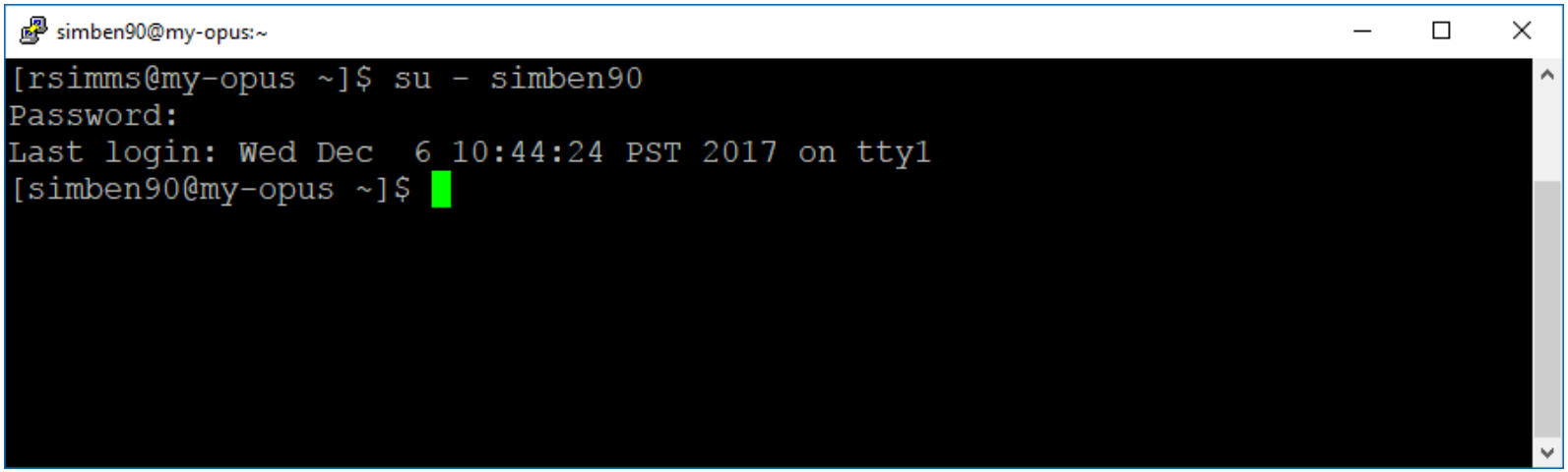


http://patorjk.com/software/taag

sudo useradd -c "Benji Simms" -m -s /bin/bash simben90
sudo passwd simben90



su - simben90



Switch to your CIS 90 account

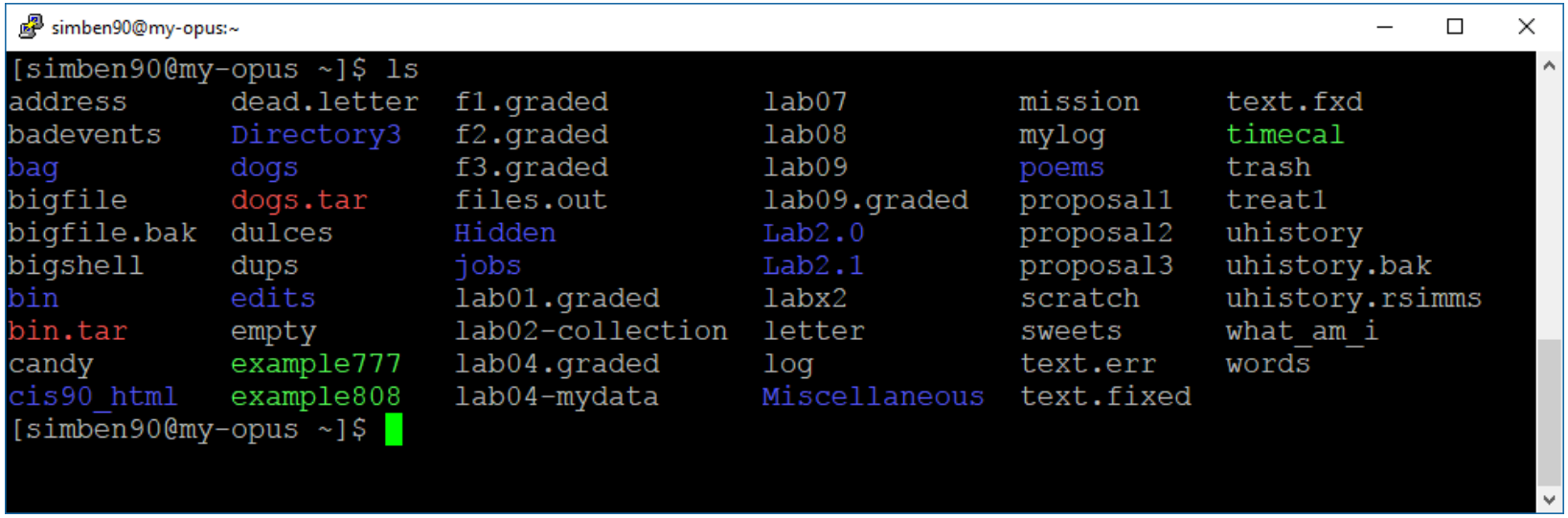
scp -r -P 2220 opus-ii.cis.cabrillo.edu:* .
yes

simben90@my-opus:~

```
[simben90@my-opus ~]$ scp -r -P 2220 opus-ii.cis.cabrillo.edu:* .
The authenticity of host '[opus-ii.cis.cabrillo.edu]:2220 ([2607:f380:80f:f425::244]:2220)
' can't be established.
ECDSA key fingerprint is SHA256:xKmlxeB/u8y3dW61lLYniQzigUQmlpdcPS2mPdd8SV0.
ECDSA key fingerprint is MD5:b3:bc:ad:b3:a9:38:ab:9e:5a:bb:7b:d0:3c:e5:57:e6.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '[opus-ii.cis.cabrillo.edu]:2220,[2607:f380:80f:f425::244]:2220
' (ECDSA) to the list of known hosts.
simben90@opus-ii.cis.cabrillo.edu's password:
address                                       100%   22     1.4KB/s   00:00
badevents                                     100% 1010    32.8KB/s   00:00
treat5                                        100%  795    42.3KB/s   00:00
bigfile                                       100%   10KB 612.5KB/s   00:00
bigfile.bak                                   100%   10KB 615.7KB/s   00:00
bigshell                                      100%   70     3.8KB/s   00:00
enlightenment                                 100% 3442   150.0KB/s   00:00
treed                                         100%  190    11.1KB/s   00:00
zoom                                          100%   74     3.4KB/s   00:00
app                                           100%  220    14.5KB/s   00:00
hi                                            100%  107     7.4KB/s   00:00
I                                             100%  375    16.2KB/s   00:00
tryme                                         100%  174     7.2KB/s   00:00
banner                                        100%   15KB 800.2KB/s   00:00
simple.c                                      100%  598    27.6KB/s   00:00
simple                                        100% 8768   490.9KB/s   00:00
simpleplus.cpp                                100%  630    42.3KB/s   00:00
```

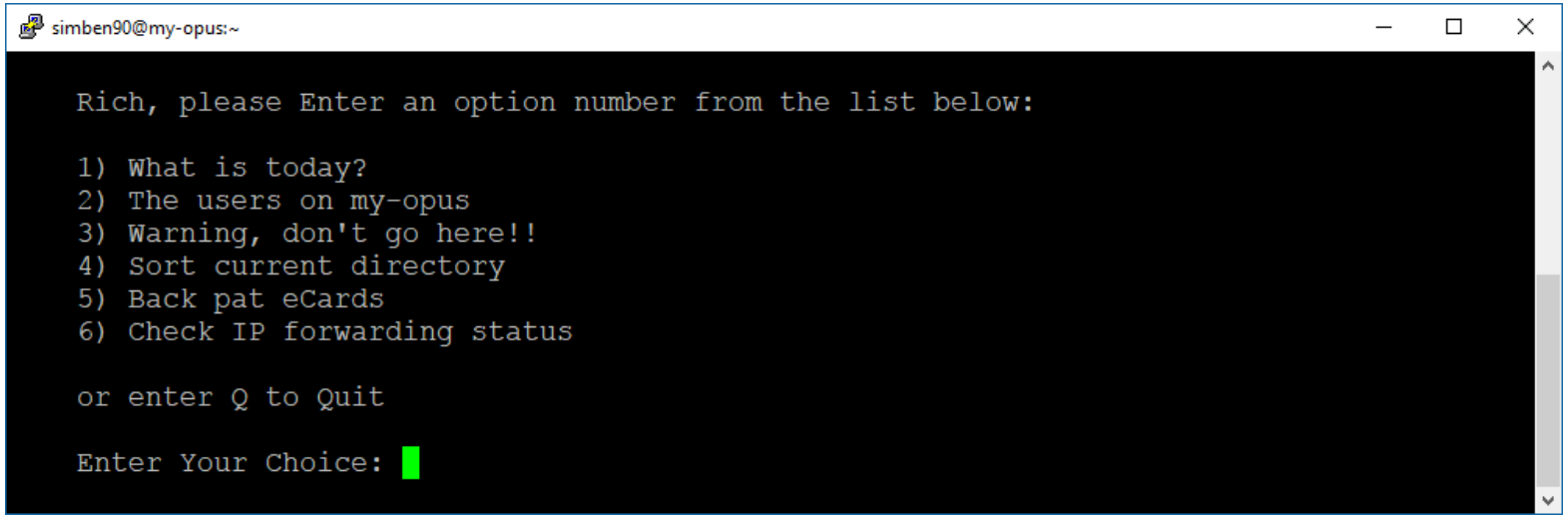

Copy your CIS 90 files recursively from Opus-II

ls



Make sure you got them all

bin/myscript

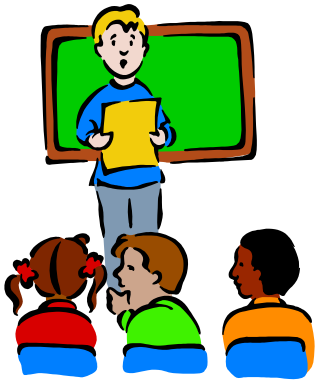


Check you can still run your final project

Activity
(If time permits)

1. Google "virtualbox download"
2. Install VirtualBox
3. Create a new Linux Ubuntu VM named MyOpus
4. Google "centos download"
5. Download a minimal CentOS iso.
6. Put the ISO "into" your CD drive on MyOpus
7. Power up MyOpus and install CentOS

Project Presentations



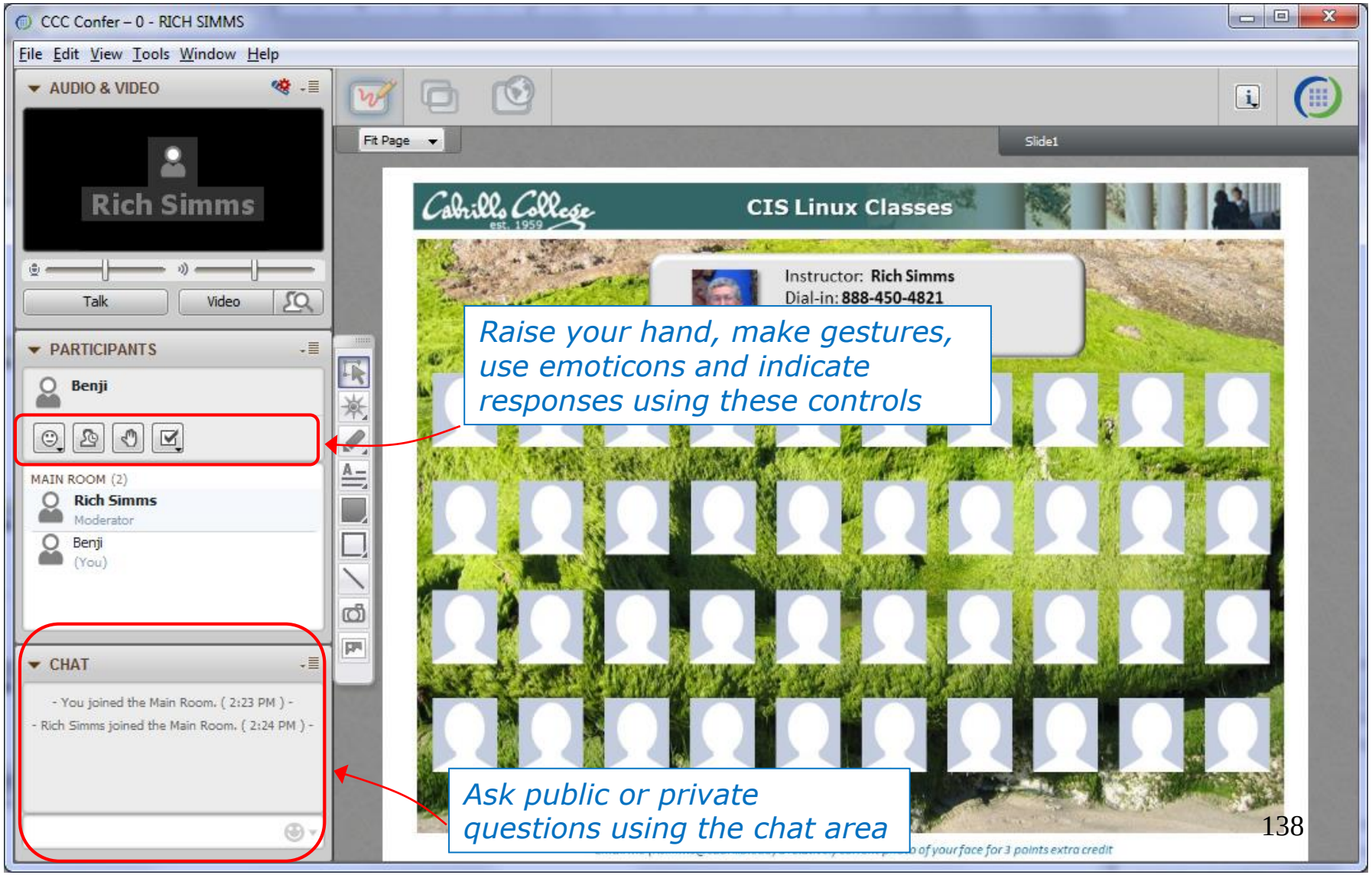
To demo your project and earn five points:

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!

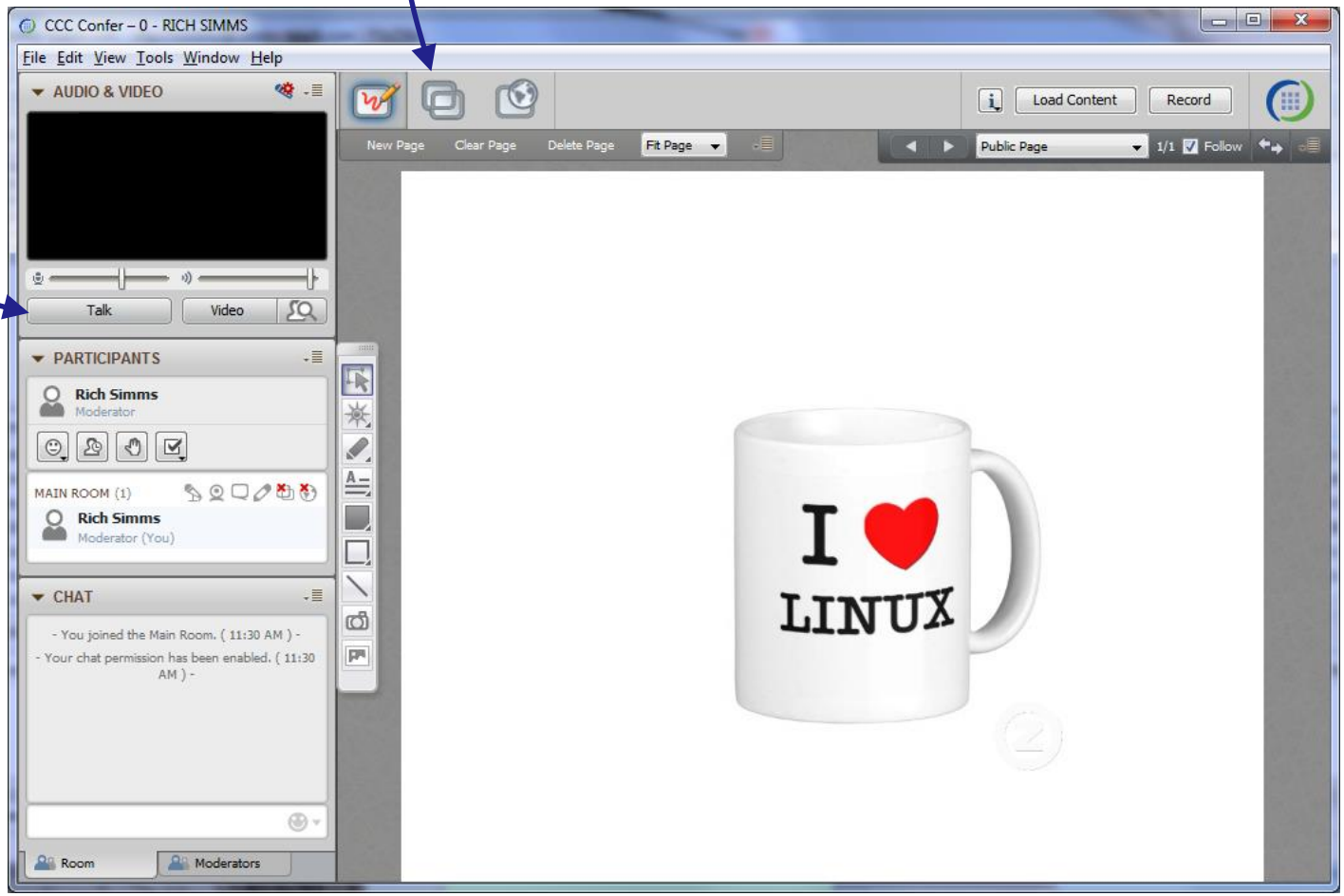
CCC Confer - Attending class online



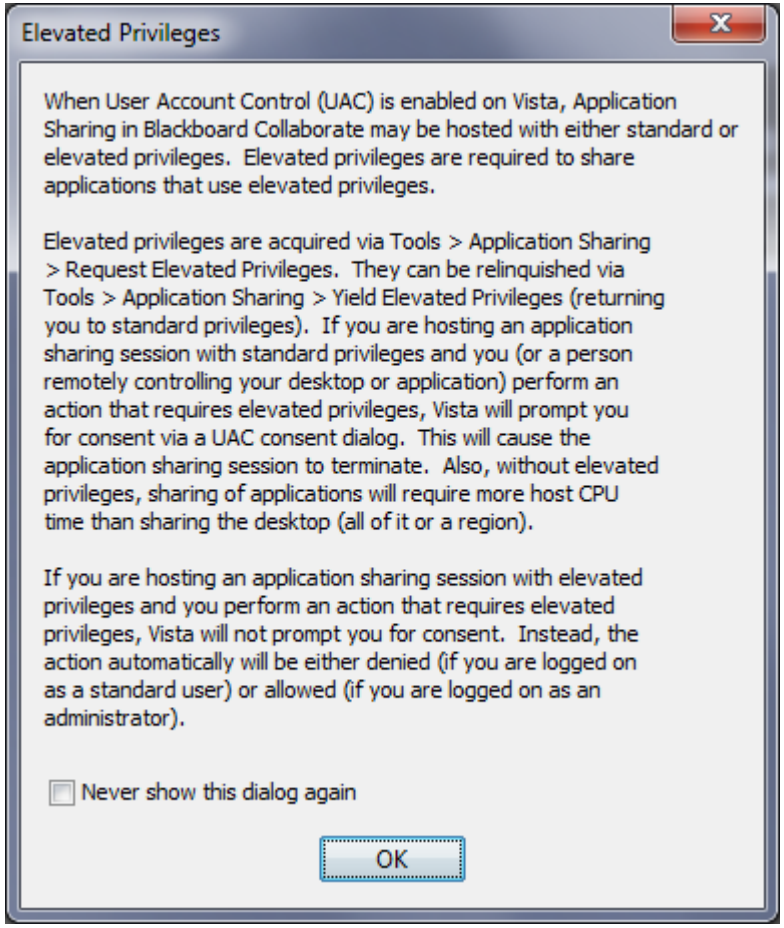
Sharing from CCC Confer

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

*Click **overlapping rectangles** to share*

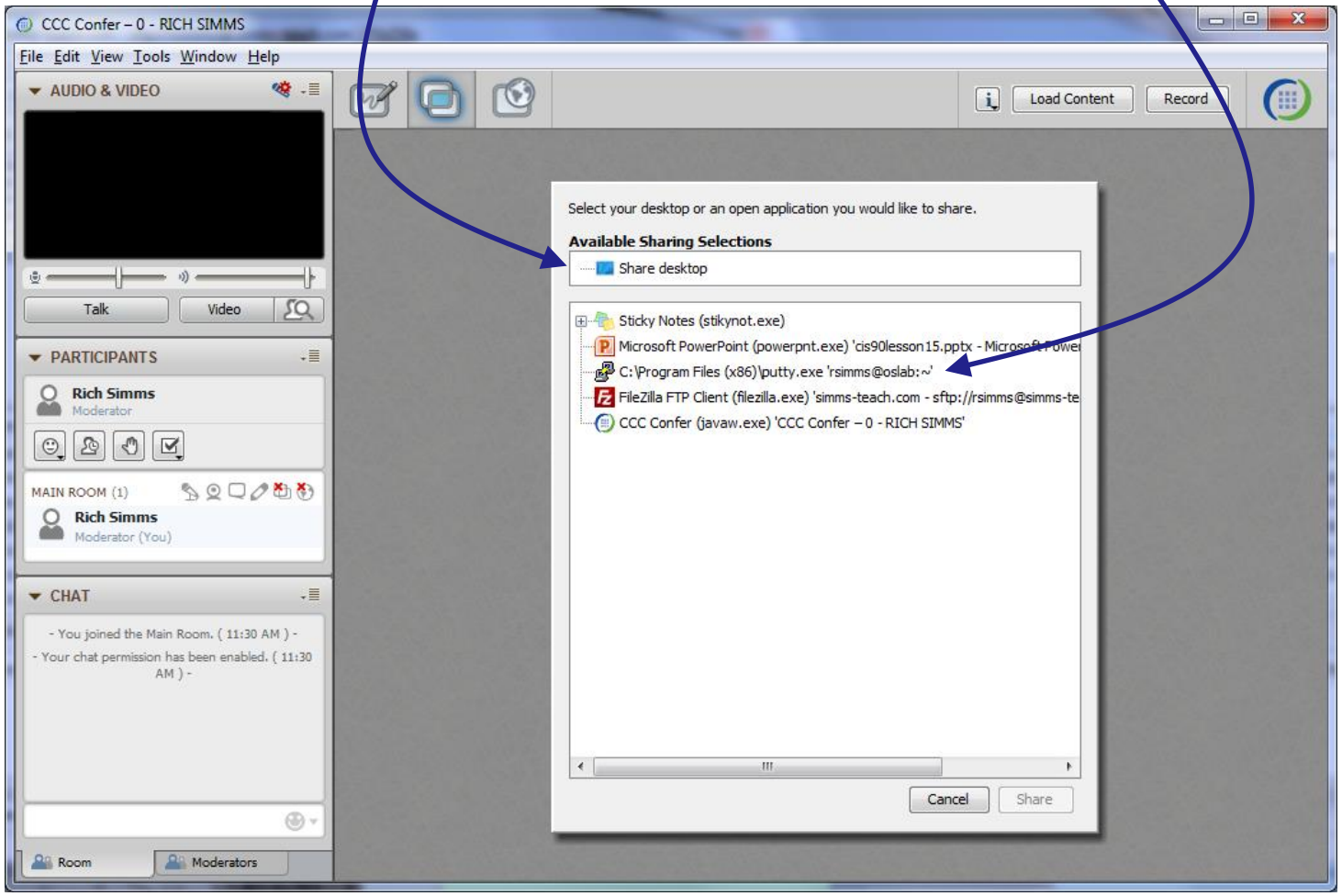


Sharing from CCC Confer



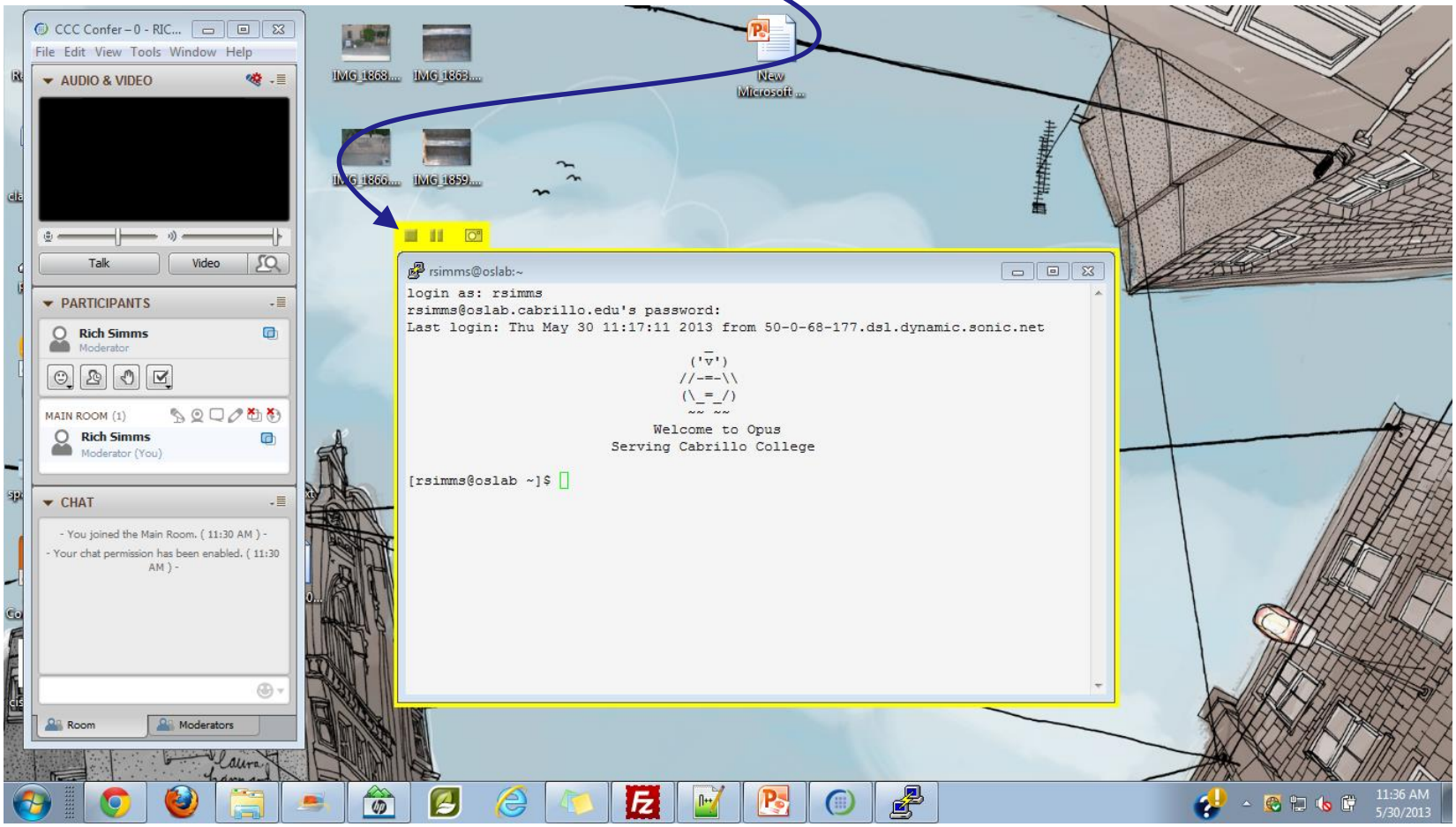
Sharing from CCC Confer

Either share putty/terminal or entire desktop



Sharing from CCC Confer

Click stop symbol to end sharing



Assignment

Notes to instructor

Practice Test System

[ ] Start: `echo "/root/unlock-cis90; rm /etc/nologin" | at` *[T-1wk+1hr]*

[ ] End: `echo "/root/lock-cis90; cp /etc/nologin.bak /etc/nologin" | at` *[T-30]*

Canvas Practice Test:

[ ] availability from = *[T-1wk+1hr]*, due & available until = *[T-30]*

[ ] remove password on real test on Canvas *[T-1wk]*

[ ] moderate any accommodations

Real Test system

[ ] Start: `echo "/root/unlock-cis90; rm /etc/nologin" | at` *[T-0]*

[ ] End: `echo "/root/lock-cis90; cp /etc/nologin.bak /etc/nologin" | at` *[splashdown]*

Canvas Real Test:

[ ] availability from = *[T-0]*, due & available until = *[splashdown]*

[ ] remove password on real test on Canvas *[T-0]*

[ ] moderate any accommodations

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