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# Setting Up a Virtual Machine

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UNIX Workshop  
September 2015

# Step #1 – Download and Install VirtualBox

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1. Go to [www.virtualbox.org](http://www.virtualbox.org)
2. Download the appropriate file for your operating system
3. Install VirtualBox using the default settings
4. Open VirtualBox

Oracle VM VirtualBox

https://www.virtualbox.org

Jill



# VirtualBox

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## Welcome to VirtualBox.org!

VirtualBox is a powerful x86 and AMD64/Intel64 [virtualization](#) product for enterprise as well as home use. Not only is VirtualBox an extremely feature rich, high performance product for enterprise customers, it is also the only professional solution that is freely available as Open Source Software under the terms of the GNU General Public License (GPL) version 2. See "[About VirtualBox](#)" for an introduction.

Presently, VirtualBox runs on Windows, Linux, Macintosh, and Solaris hosts and supports a large number of [guest operating systems](#) including but not limited to Windows (NT 4.0, 2000, XP, Server 2003, Vista, Windows 7, Windows 8), DOS/Windows 3.x, Linux (2.4, 2.6 and 3.x), Solaris and OpenSolaris, OS/2, and OpenBSD.

VirtualBox is being actively developed with frequent releases and has an ever growing list of features, supported guest operating systems and platforms it runs on. VirtualBox is a community effort backed by a dedicated company: everyone is encouraged to contribute while Oracle ensures the product always meets professional quality criteria.

### News Flash

- New August 13th, 2015**  
**VirtualBox 5.0.2 released!**  
Oracle today released the first 5.0 maintenance release which improves stability and fixes regressions. See the [Changelog](#) for details.
- New July 9th, 2015**  
**VirtualBox 5.0 released!**  
Read the official See [press release](#) for details.
- New July 10th, 2015**  
**VirtualBox 4.3.30, 4.2.32, 4.1.30, and 4.0.32 released!**  
Oracle today released maintenance releases which improve stability and fixes regressions. See the respective changelogs for details.
- Important February, 2015**  
**We're hiring!**  
Looking for a new challenge? We're looking for [generic product developers \(Russia\)](#).

[More information...](#)

Click Here

Download VirtualBox 5.0



# VirtualBox

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## Download VirtualBox

Here, you will find links to VirtualBox binaries and its source code.

### VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

- **VirtualBox platform packages.** The binaries are released under the terms of the GPL version 2.
  - **VirtualBox 5.0.2 for Windows hosts** ⇒ x86/amd64 **For Windows**  
*Please be aware that Windows 10 is not yet officially supported! There are known problems with VirtualBox 5.0.2 on Windows 10 hosts and with Windows 10 guests. Some of the problems are fixed in the most recent test build which can be found [here](#).*
  - **VirtualBox 5.0.2 for OS X hosts** ⇒ amd64
  - **VirtualBox 5.0.2 for Linux hosts** ⇒ amd64 **For Mac OS**
  - **VirtualBox 5.0.2 for Solaris hosts** ⇒ amd64
- **VirtualBox 5.0.2 Oracle VM VirtualBox Extension Pack** ⇒ All supported platforms  
Support for USB 2.0 devices, VirtualBox RDP and PXE boot for Intel cards. See [this chapter from the User Manual](#) for an introduction to this Extension Pack. The Extension Pack binaries are released under the [VirtualBox Personal Use and Evaluation License \(PUEL\)](#).  
*Please install the extension pack with the same version as your installed version of VirtualBox!*  
*If you are using **VirtualBox 4.3.30**, please download the extension pack ⇒ [here](#).*  
*If you are using **VirtualBox 4.2.32**, please download the extension pack ⇒ [here](#).*  
*If you are using **VirtualBox 4.1.40**, please download the extension pack ⇒ [here](#).*  
*If you are using **VirtualBox 4.0.32**, please download the extension pack ⇒ [here](#).*
- **VirtualBox 5.0.2 Software Developer Kit (SDK)** ⇒ All platforms

See the [changelog](#) for what has changed.  
You might want to compare the

- [SHA256](#) checksums or the
- [MD5](#) checksums

to verify the integrity of downloaded packages.  
*The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!*

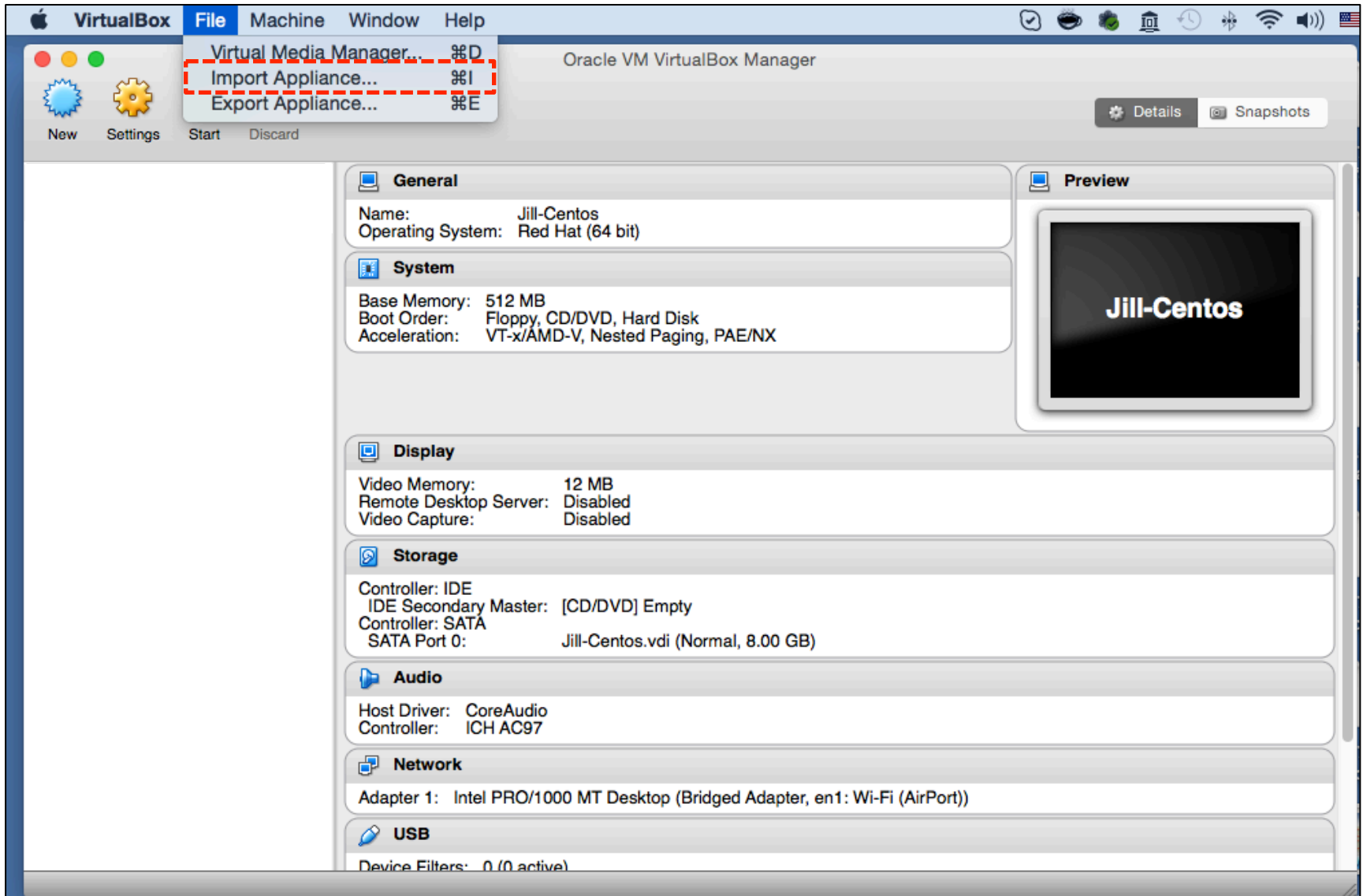
**Note:** After upgrading VirtualBox it is recommended to upgrade the guest additions as well.

# Step #2 – Download the CentOS Ova File

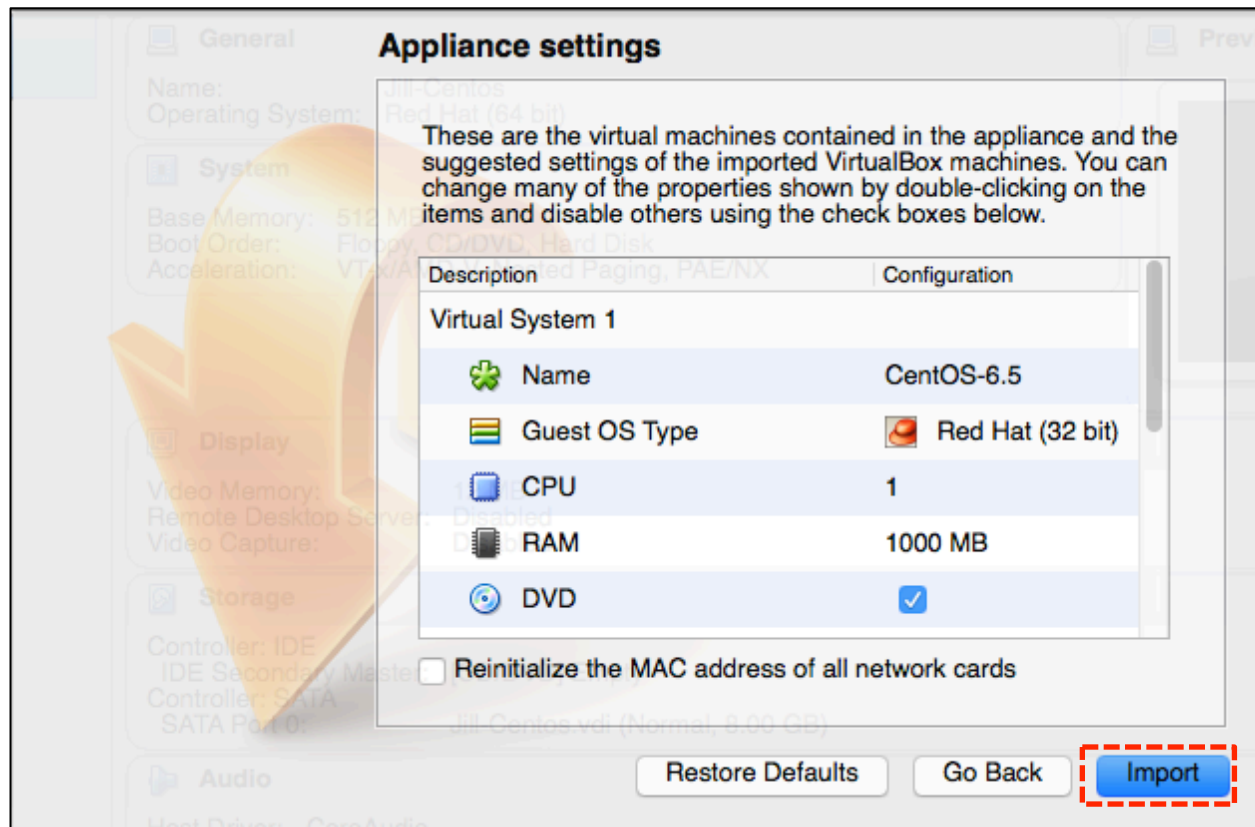
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1. Download CentOS-6.5.ova  
<https://drive.google.com/file/d/0B07orkTYRj9pNVRDN3lpUEV2bGs/view?usp=sharing>
2. Save the file to an easily accessible location on your computer

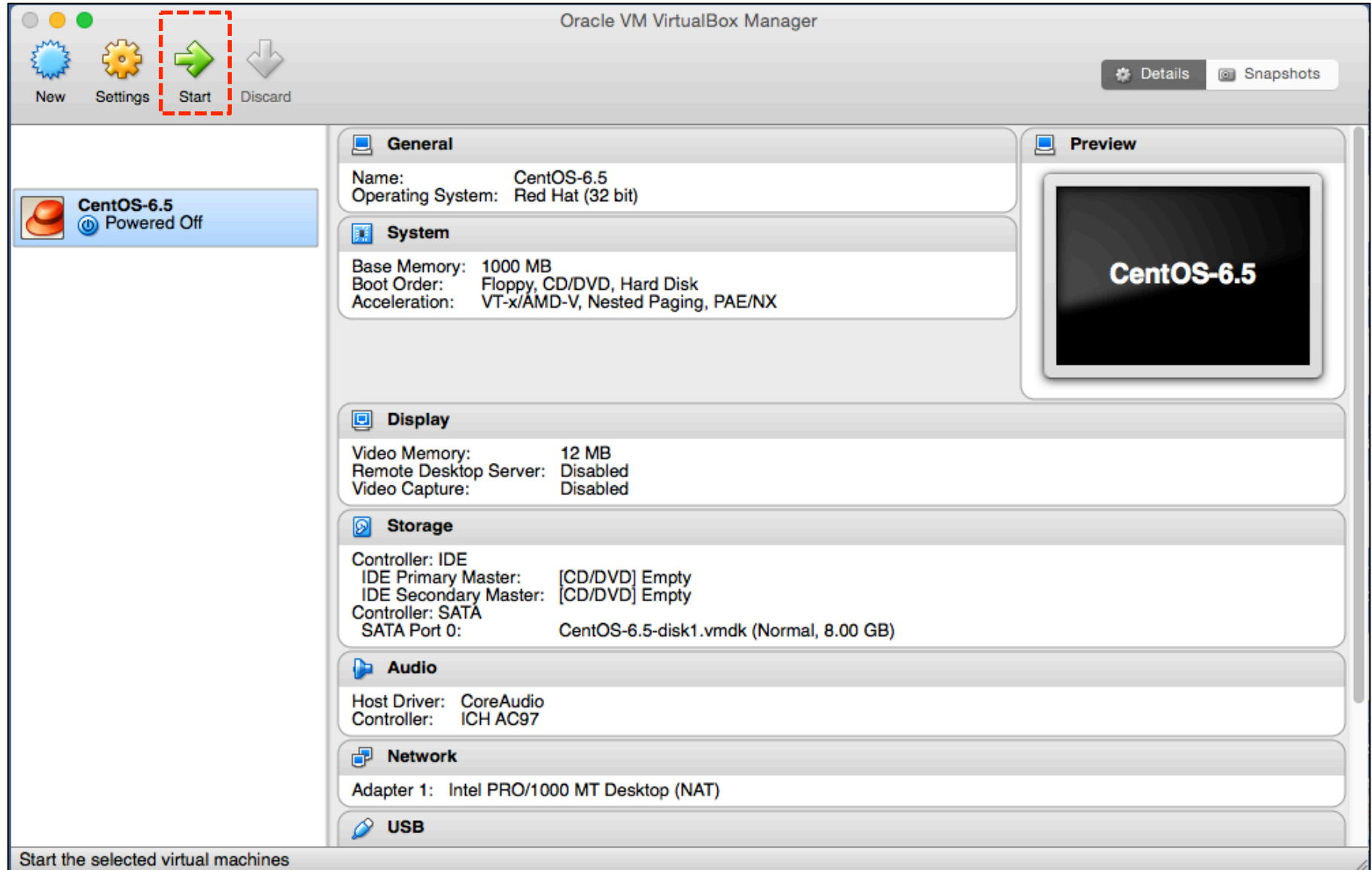
# Step #3 – Import the CentOS Ova File



# Step #4 – Use Default Settings and Click Import

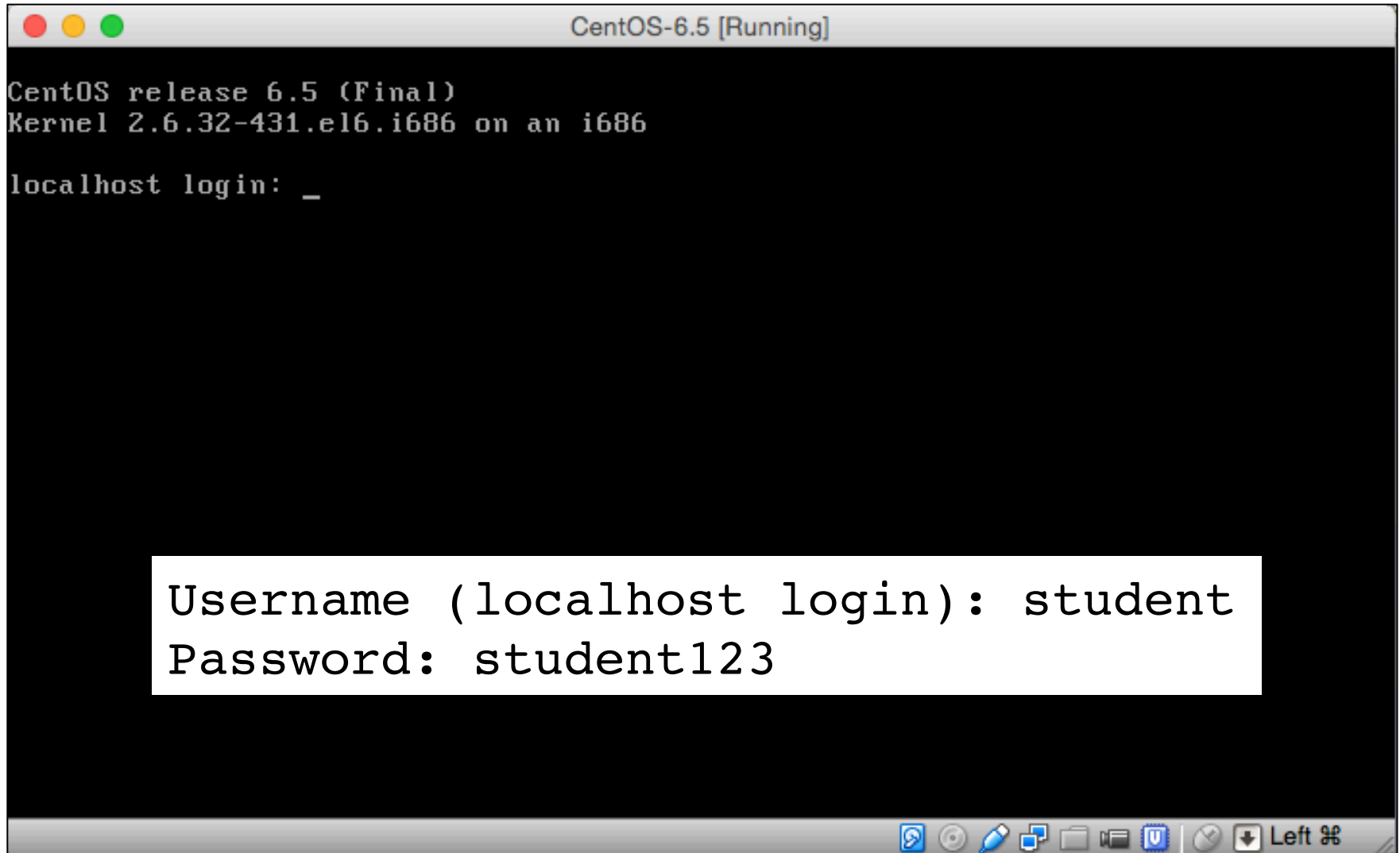


# Step #5 – Start the VM

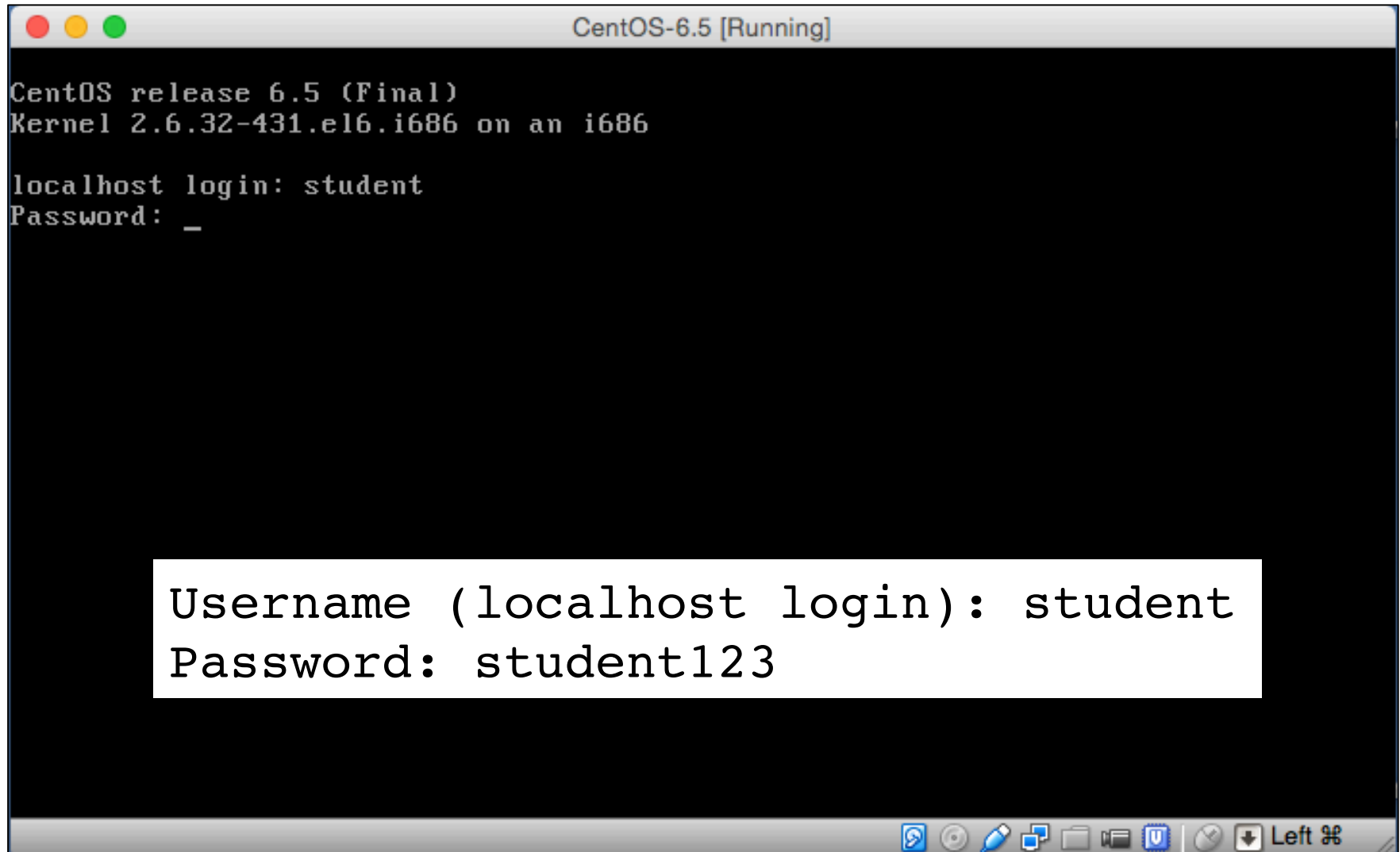




# Step #6 – Login to the VM



# Step #6 – Login to the VM



The image shows a terminal window titled "CentOS-6.5 [Running]". The terminal output displays the CentOS release information and a login prompt. A white text box is overlaid on the terminal, showing the login details: "Username (localhost login): student" and "Password: student123". The terminal window has a standard macOS-style title bar with red, yellow, and green window control buttons. The bottom of the window shows a dock with various application icons and a status bar with the text "Left 36".

```
CentOS release 6.5 (Final)
Kernel 2.6.32-431.el6.i686 on an i686

localhost login: student
Password: _
```

Username (localhost login): student  
Password: student123

# Step #7 – Verification

1. Type pwd and hit enter
2. Paste the result in the Google spreadsheet

```
CentOS release 6.5 (Final)
Kernel 2.6.32-431.el6.i686 on an i686

localhost login: student
Password:
Last login: Mon Sep  7 13:00:20 on tty1
[student@localhost ~]$ pwd_
```



```
CentOS release 6.5 (Final)
Kernel 2.6.32-431.el6.i686 on an i686

localhost login: student
Password:
Last login: Mon Sep  7 13:00:20 on tty1
[student@localhost ~]$ pwd
/home/student
[student@localhost ~]$ _
```

# Step #8 – Verification

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1. Type `ping www.google.com | head -n 5` and hit enter
2. Paste the first line result in the Google spreadsheet

```
CentOS release 6.5 (Final)
Kernel 2.6.32-431.el6.i686 on an i686

localhost login: student
Password:
Last login: Fri Sep 11 10:19:41 on tty1
[student@localhost ~]$ pwd
/home/student
[student@localhost ~]$ ping www.google.com | head -n 5
PING www.google.com (74.125.141.105) 56(84) bytes of data:
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=1 ttl=63 time=36.0
ms
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=2 ttl=63 time=32.4
ms
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=3 ttl=63 time=32.8
ms
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=4 ttl=63 time=34.7
ms
[student@localhost ~]$ _
```

# Step #9 – Logoff

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## 1. Type

`exit`

and hit enter

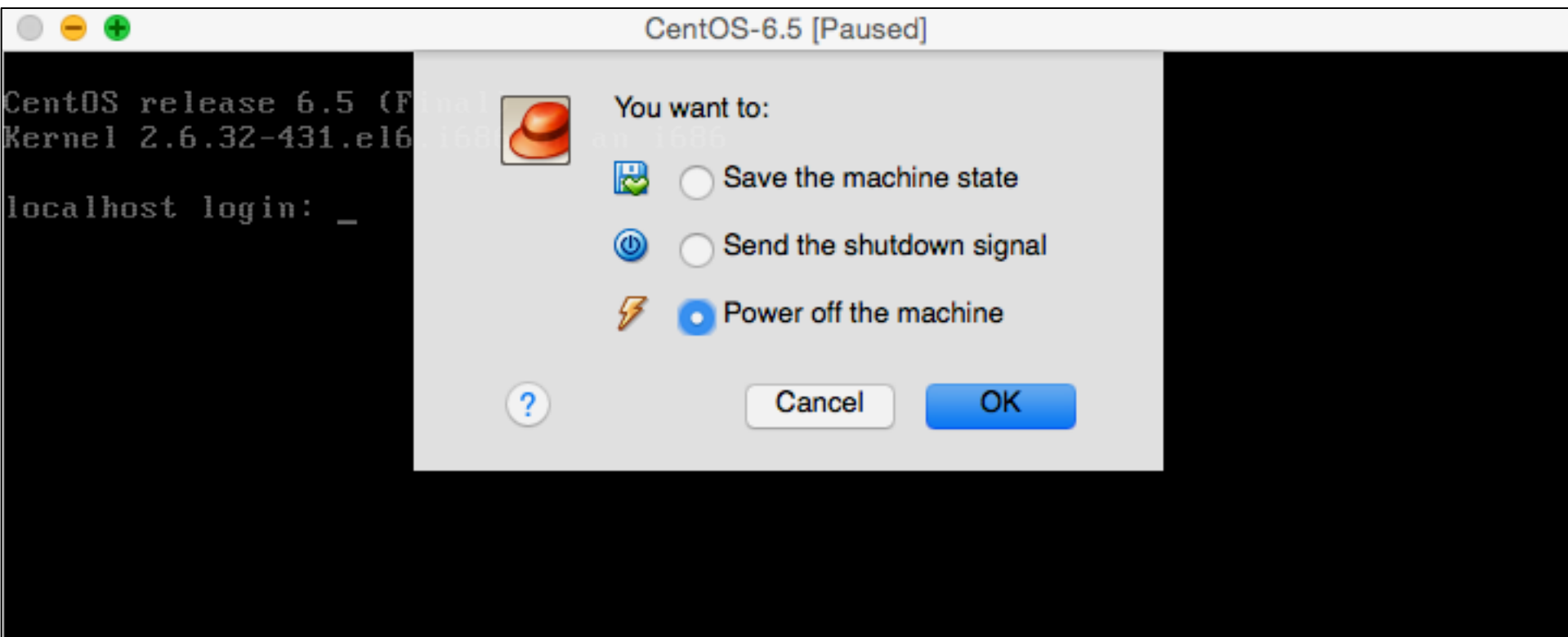
```
CentOS release 6.5 (Final)
Kernel 2.6.32-431.el6.i686 on an i686

localhost login: student
Password:
Last login: Fri Sep 11 10:19:41 on tty1
[student@localhost ~]$ pwd
/home/student
[student@localhost ~]$ ping www.google.com | head -n 5
PING www.google.com (74.125.141.105) 56(84) bytes of data.
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=1 ttl=63 time=36.0
ms
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=2 ttl=63 time=32.4
ms
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=3 ttl=63 time=32.8
ms
64 bytes from v1-in-f105.1e100.net (74.125.141.105): icmp_seq=4 ttl=63 time=34.7
ms
[student@localhost ~]$ exit_
```

# Step #10 – Shut Down the VM

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1. Click the “close button” on the window (X or red circle)
2. Select Power off the Machine



# Questions?

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1. Send an email to [Jill.Moore@umassmed.edu](mailto:Jill.Moore@umassmed.edu)
2. Stop by office hours on Monday, September 14 from 2pm to 4pm in room AS5-1081

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# Login to Cluster & Start Interactive Job

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UNIX Workshop  
September 2015



# Step #1 – Login to the Cluster

```
JMoore — jm36w@ghpcc06:~ — ssh — 81x27
Last login: Tue Sep  8 12:25:40 on ttys000
Zlab-iMac:~ JMoore$ ssh jm36w@ghpcc06.umassrc.org
jm36w@ghpcc06.umassrc.org's password:
Last login: Mon Sep  7 15:50:09 2015 from 146.189.124.42
NOTICE TO USERS
-----
This is the University of Massachusetts information technology environment.
You MUST be authorized to use these resources. By your use of these resources,
you have agreed to abide by the highest standards of responsibility to your
colleagues who share this environment. You are required to comply with ALL
University policies along with state and federal laws concerning appropriate
use of information technology. Non-compliance is considered a serious breach
of community standards and may result in disciplinary and/or legal action.

To subscribe to the new GHPCC user discussion list, email:
ghpcc-discussion-request@list.umassmed.edu with subject "subscribe"
Or go to https://www.umassrc.org/hpc/ghpcc-discussion.php

For an introduction to the UMass GHPCC and documentation, please see:
http://wiki.umassrc.org/

For questions related to the UMass GHPCC cluster please contact:
hpc-support@umassmed.edu

[jm36w@ghpcc06 ~]$
```

# Step #2 – Directory Verification

1. Type pwd and hit enter

2. Paste the result in the Google spreadsheet

```
JMoore — jm36w@ghpcc06:~ — ssh — 81x27
Zlab-iMac:~ JMoore$ ssh jm36w@ghpcc06.umassrc.org
jm36w@ghpcc06.umassrc.org's password:
Last login: Tue Sep  8 13:13:59 2015 from 146.189.160.125
NOTICE TO USERS
-----
This is the University of Massachusetts information technology environment.
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you have agreed to abide by the highest standards of responsibility to your
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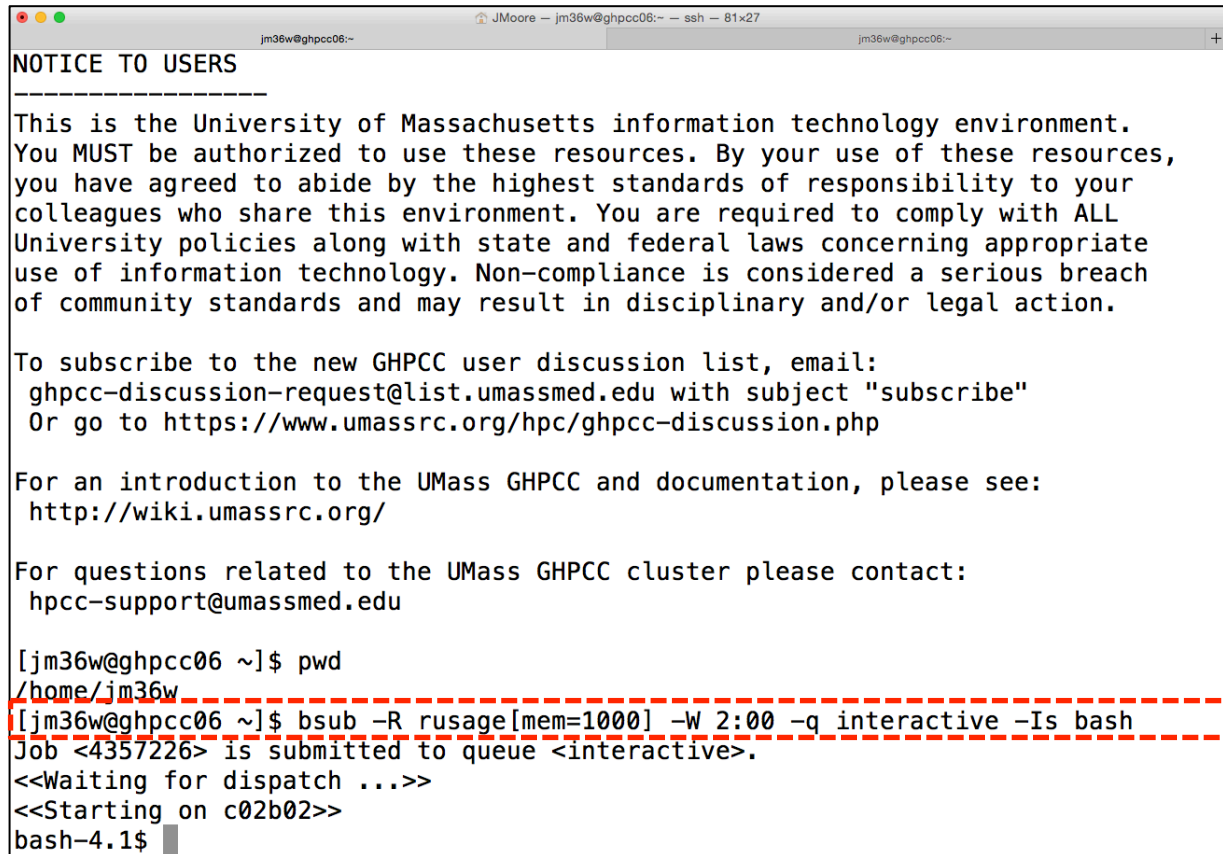
For questions related to the UMass GHPCC cluster please contact:
hpcc-support@umassmed.edu

[jm36w@ghpcc06 ~]$ pwd
/home/jm36w
[jm36w@ghpcc06 ~]$
```

# Step #3 – Start an Interactive Job

Type

`bsub -R rusage[mem=1000] -W 2:00 -q interactive -Is bash`  
and hit enter



```
jm36w@ghpcc06:~  
NOTICE TO USERS  
-----  
This is the University of Massachusetts information technology environment.  
You MUST be authorized to use these resources. By your use of these resources,  
you have agreed to abide by the highest standards of responsibility to your  
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For an introduction to the UMass GHPCC and documentation, please see:  
http://wiki.umassrc.org/  
  
For questions related to the UMass GHPCC cluster please contact:  
hpcc-support@umassmed.edu  
  
[jm36w@ghpcc06 ~]$ pwd  
/home/jm36w  
[jm36w@ghpcc06 ~]$ bsub -R rusage[mem=1000] -W 2:00 -q interactive -Is bash  
Job <4357226> is submitted to queue <interactive>.  
<<Waiting for dispatch ...>>  
<<Starting on c02b02>>  
bash-4.1$
```

# Step #4 – Verify the Interactive Job

1. Type `bjobs` and hit enter

2. Paste the last line in the Google spreadsheet

3. Then type `exit` to leave the interactive job

```

You MUST be authorized to use these resources. By your use of these resources,
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colleagues who share this environment. You are required to comply with ALL
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For questions related to the UMass GHPCC cluster please contact:
hpcc-support@umassmed.edu

[jm36w@ghpcc06 ~]$ pwd
/home/jm36w
[jm36w@ghpcc06 ~]$ bsub -R rusage[mem=1000] -W 2:00 -q interactive -Is bash
Job <4357226> is submitted to queue <interactive>.
<<Waiting for dispatch ...>>
<<Starting on c02b02>>
bash-4.1$ bjobs
JOBID    USER    STAT    QUEUE    FROM_HOST    EXEC_HOST    JOB_NAME    SUBMIT_TIME
4357226  jm36w    RUN     interactiv  ghpcc06      c02b02       bash        Sep  8 13:22
bash-4.1$
```

# Questions?

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2. Stop by office hours on Monday, September 14 from 2pm to 4pm in room AS5-1081