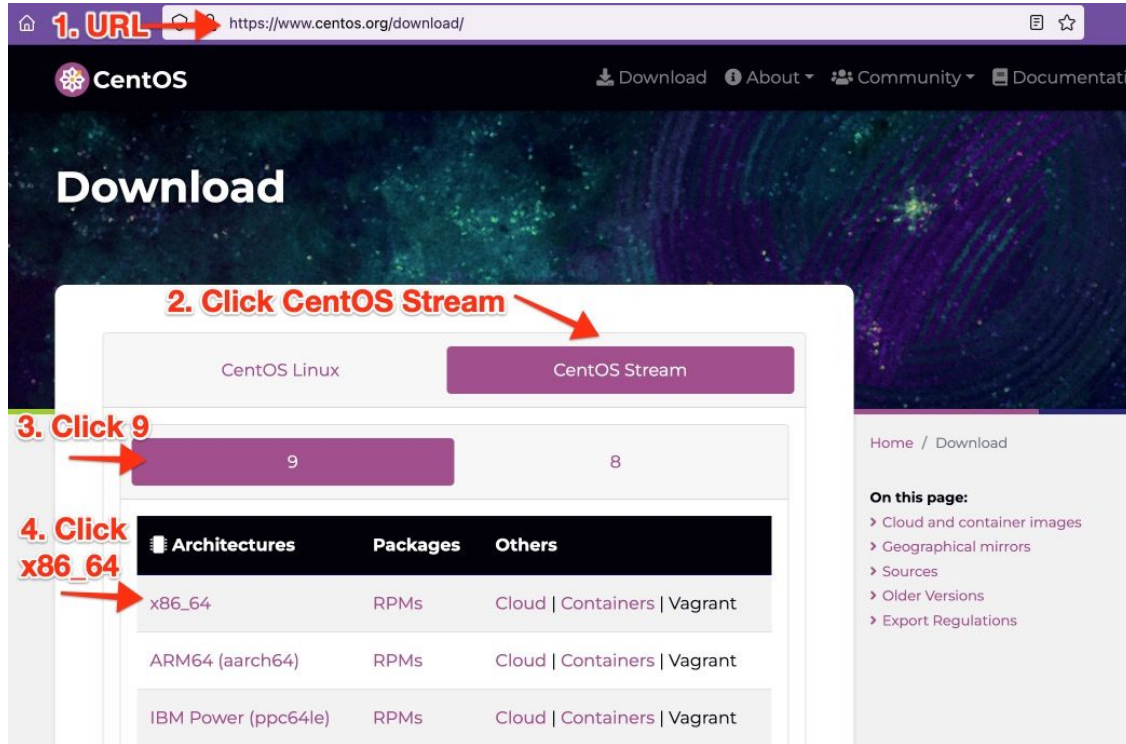


# Install CentOS 9 in virtualbox

## Installing Pre-Requisites

- Download and install Oracle Virtual box from <https://www.virtualbox.org/wiki/Downloads>
- Download CentOS 9 ISO image from this portal

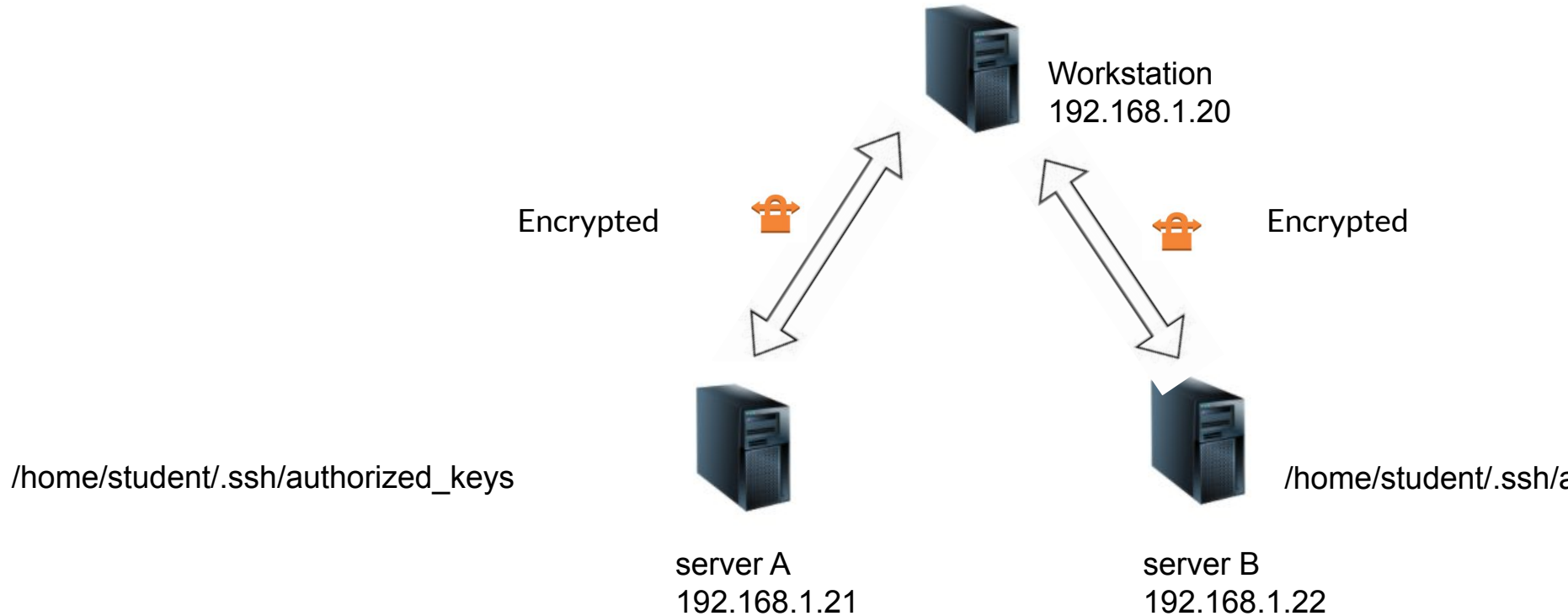


## Lab environment setup

```
workstation> ssh-keygen
```

```
/home/student/.ssh/id_rsa
```

```
/home/student/.ssh/id_rsa.pub
```



# Click New



Oracle VM VirtualBox Manager

File Machine Help



Tools



Preferences



Import



Export



New



Add

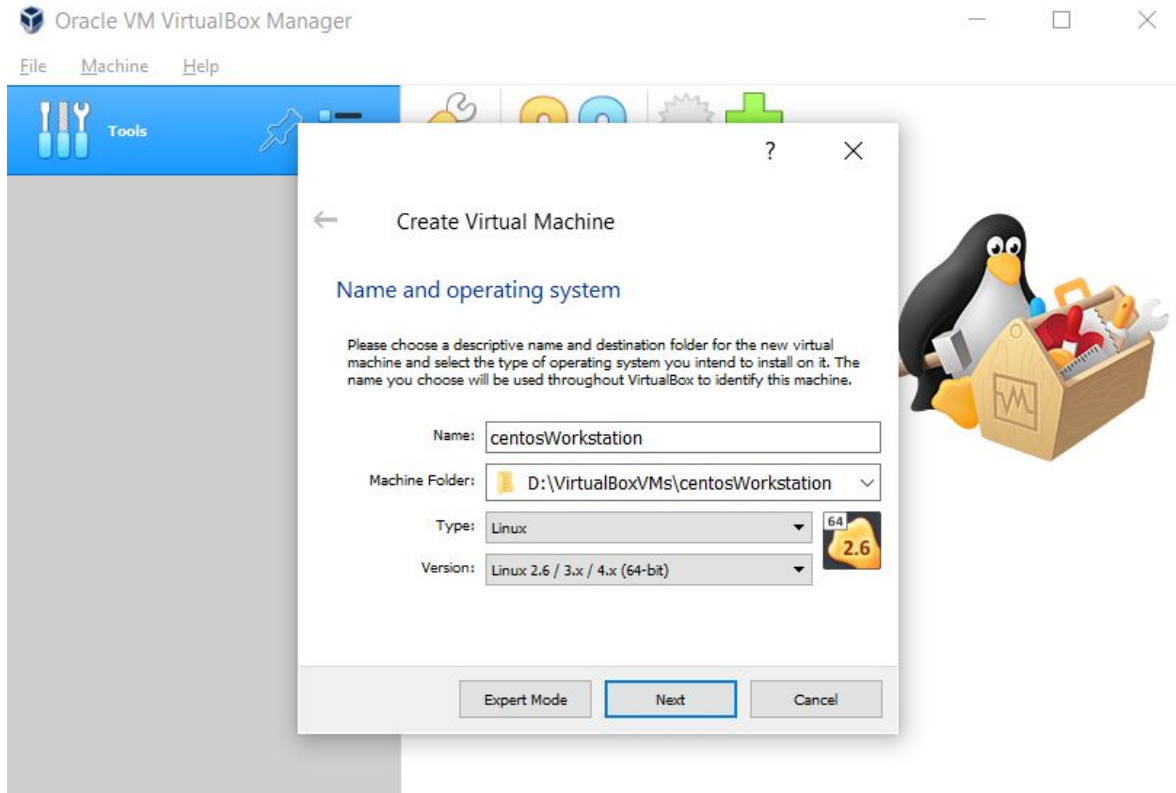
## Welcome to VirtualBox!

The left part of application window contains global tools and lists all virtual machines and virtual machine groups on your computer. You can import, add and create new VMs using corresponding toolbar buttons. You can popup a tools of currently selected element using corresponding element button.

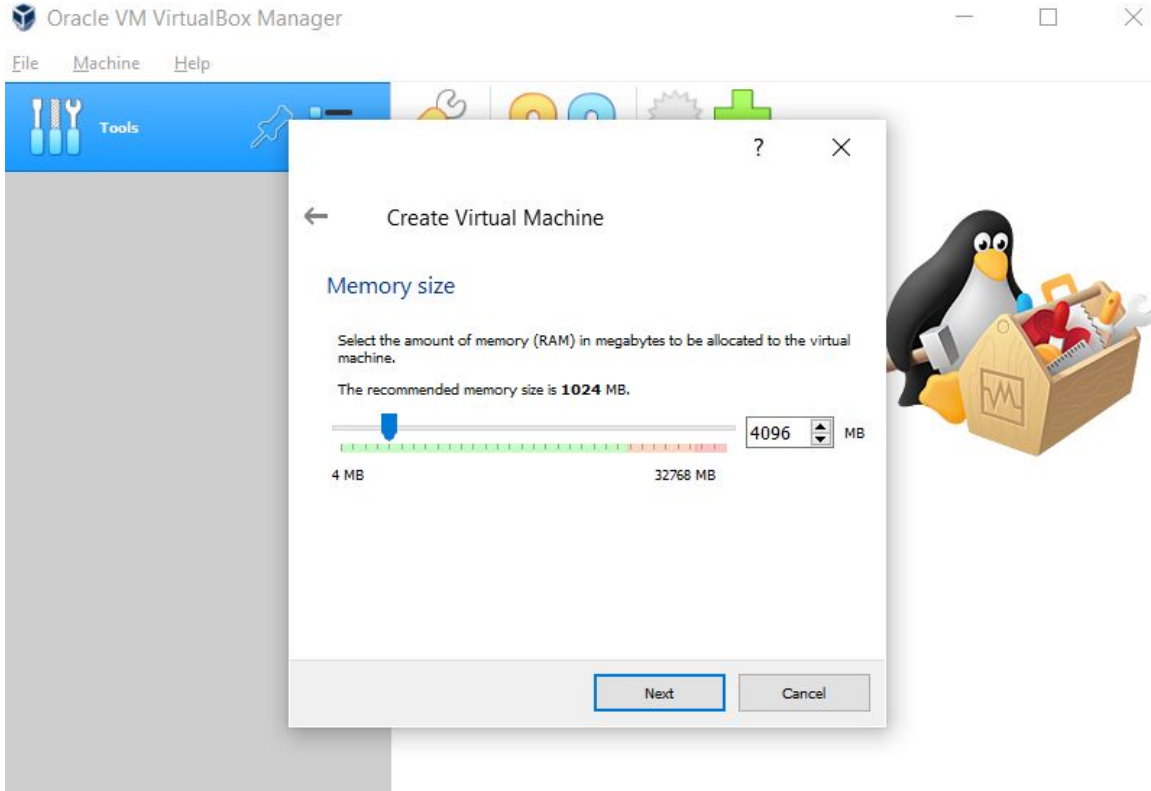
You can press the **F1** key to get instant help, or visit [www.virtualbox.org](http://www.virtualbox.org) for more information and latest news.



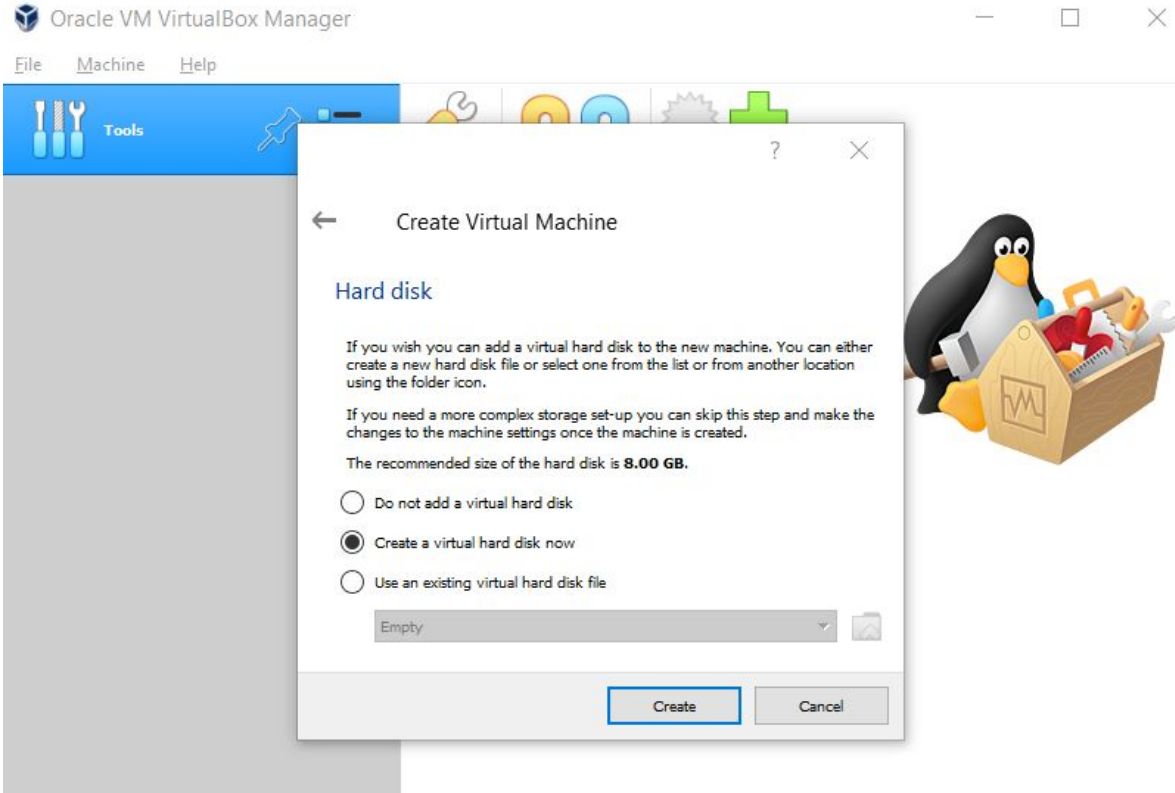
# Enter the details and Click Next



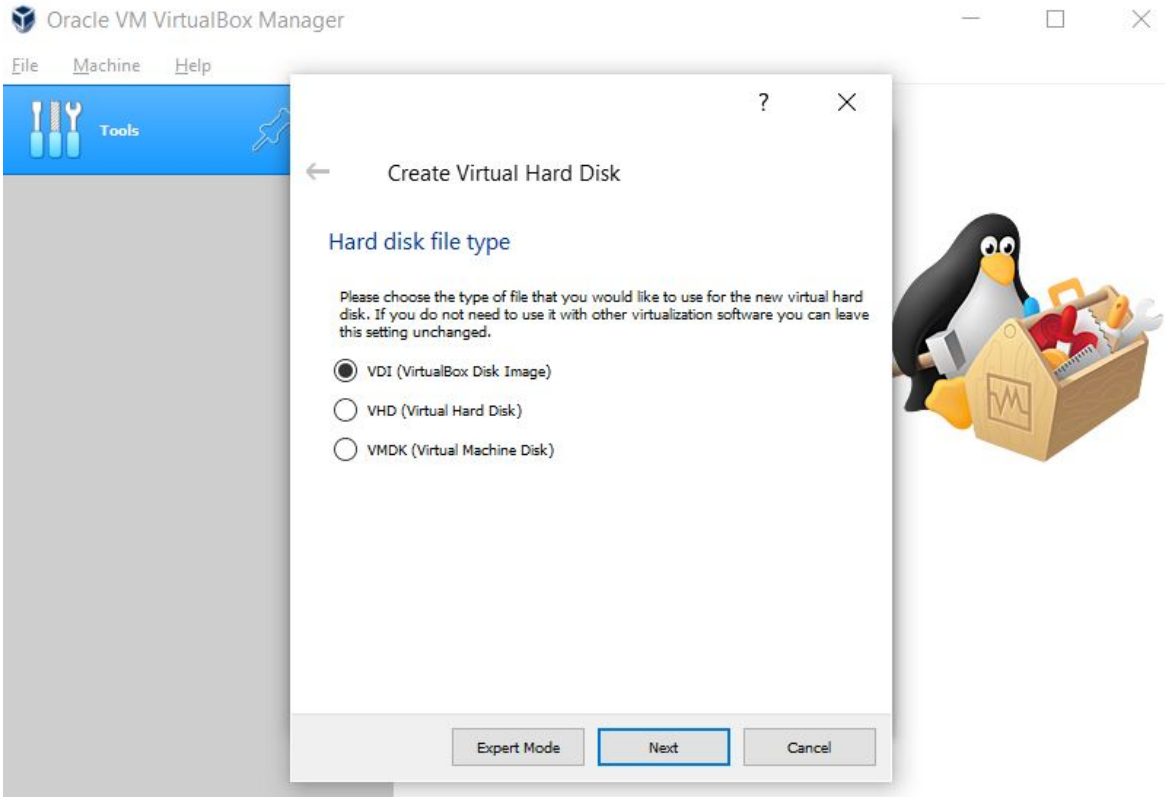
# Set the Memory (minimum 2048MB)



# Create a virtual hard disk now

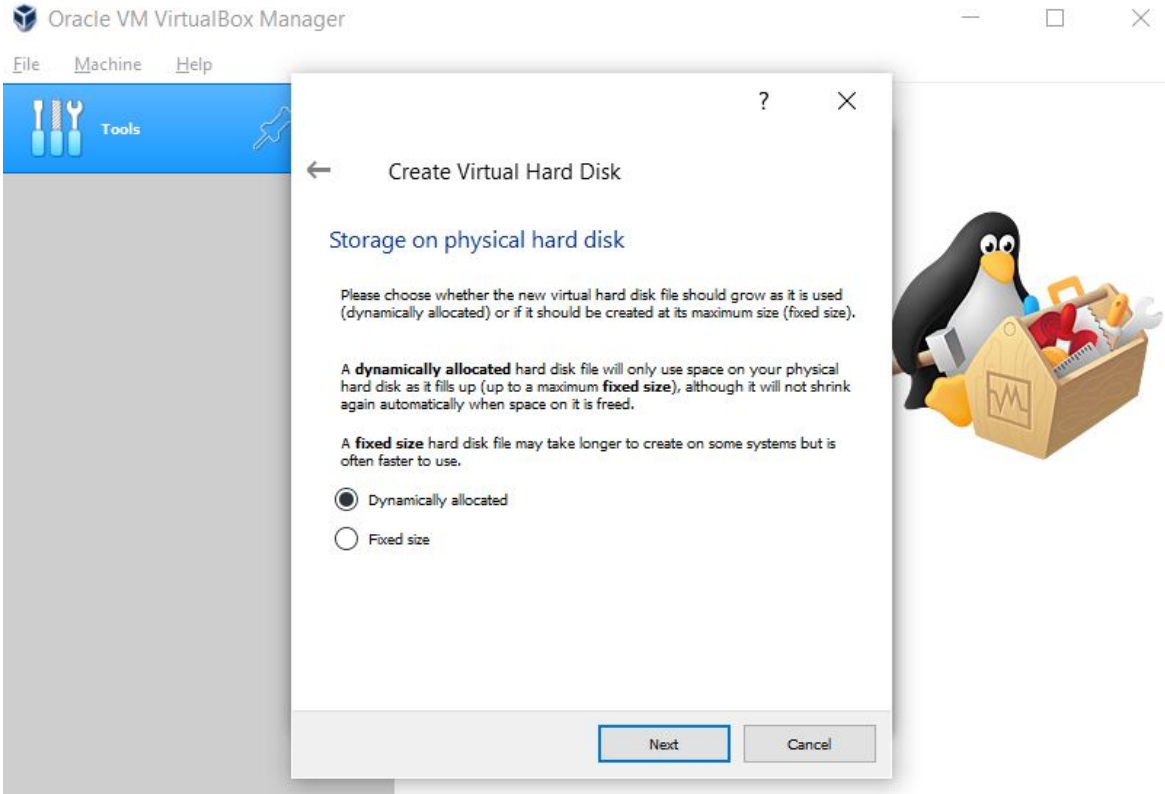


# Choose the Hard disk file type

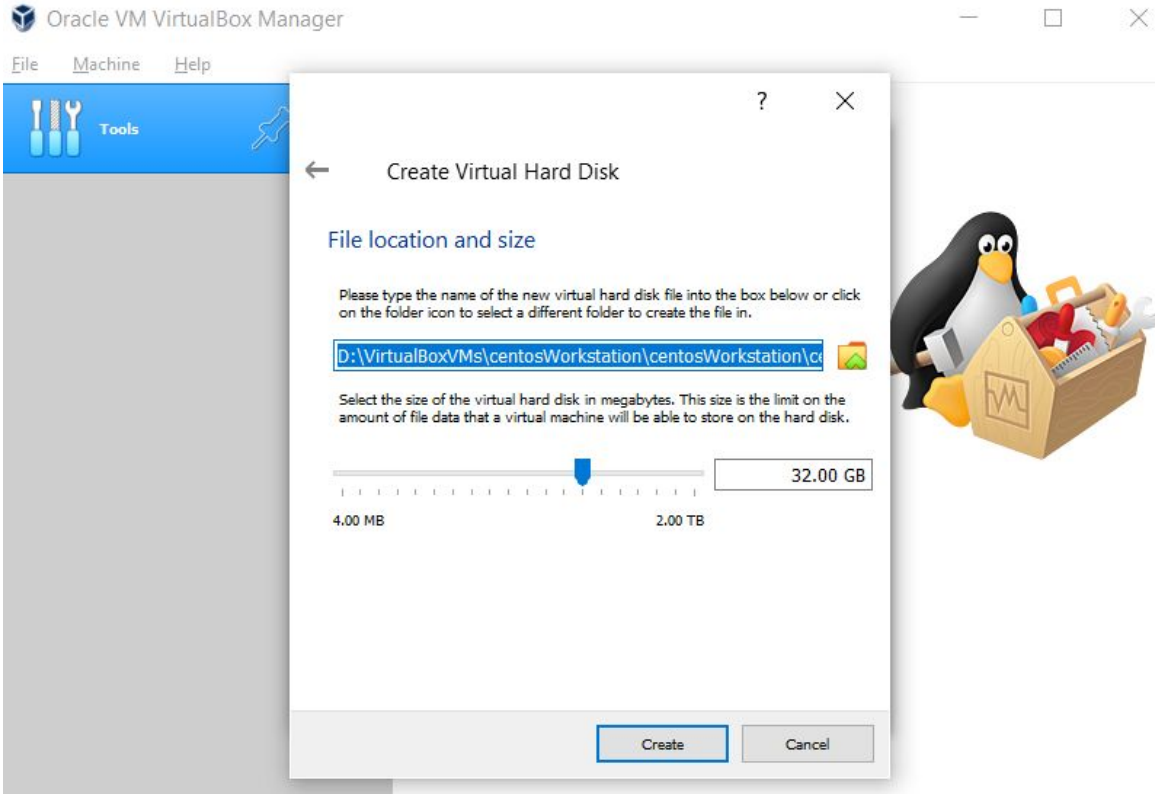




# Choose Dynamically Allocated



# Choose Hard disk location and Size



# Click Settings



Oracle VM VirtualBox Manager

File Machine Help



Tools



New



Settings



Discard



Start



General

Name: centosWorkstation  
Operating System: Linux 2.6 / 3.x / 4.x (64-bit)



System

Base Memory: 4096 MB  
Boot Order: Floppy, Optical, Hard Disk  
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization



Display

Video Memory: 16 MB  
Graphics Controller: VMSVGA  
Remote Desktop Server: Disabled  
Recording: Disabled



Storage

Controller: IDE  
IDE Secondary Device 0: [Optical Drive] Empty  
Controller: SATA  
SATA Port 0: centosWorkstation.vdi (Normal, 32.00 GB)



Audio

Host Driver: Windows DirectSound  
Controller: ICH AC97



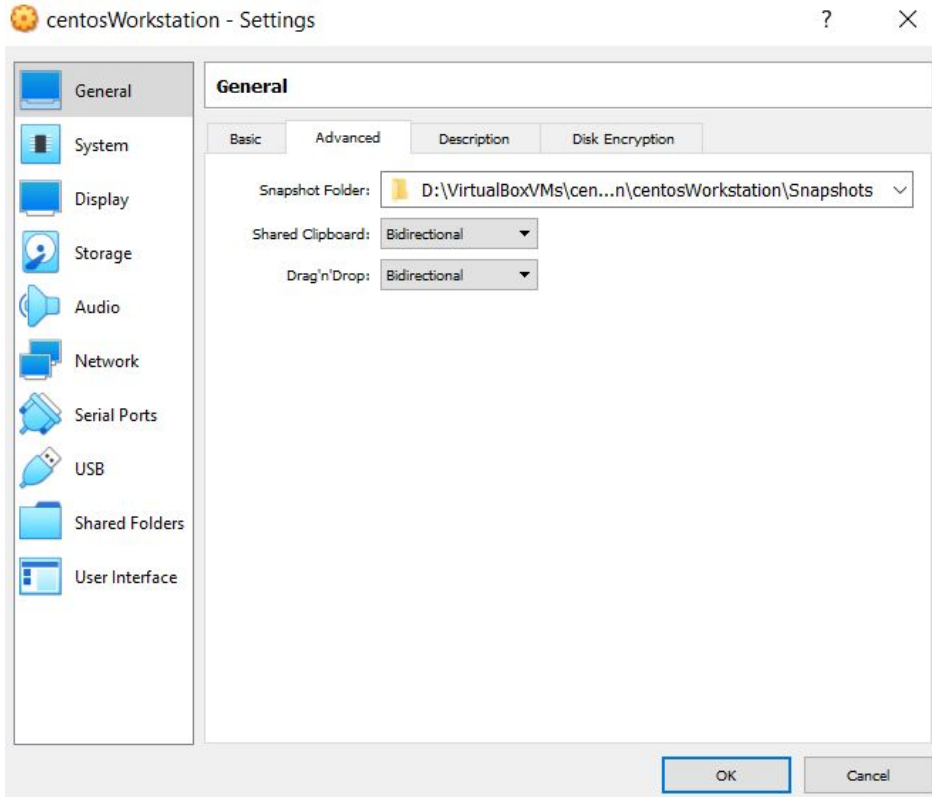
Network



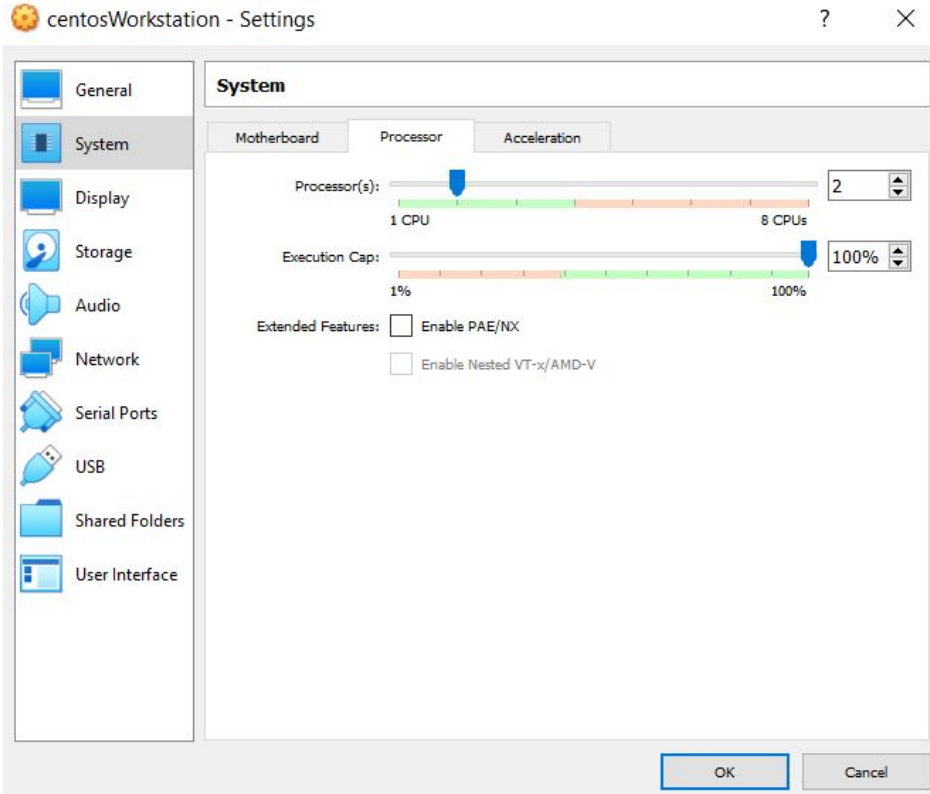
Preview



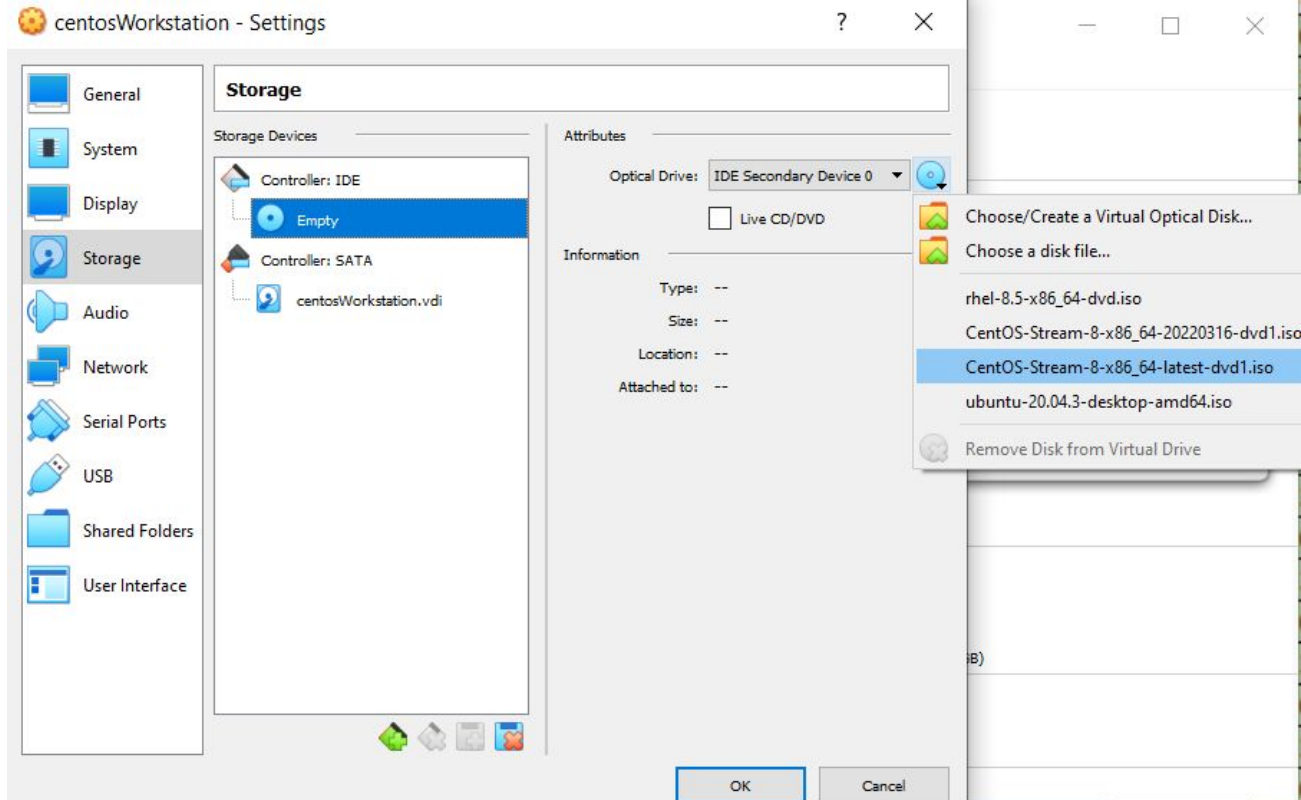
# Change the Clipboard and Drag n Drop as Bidirectional



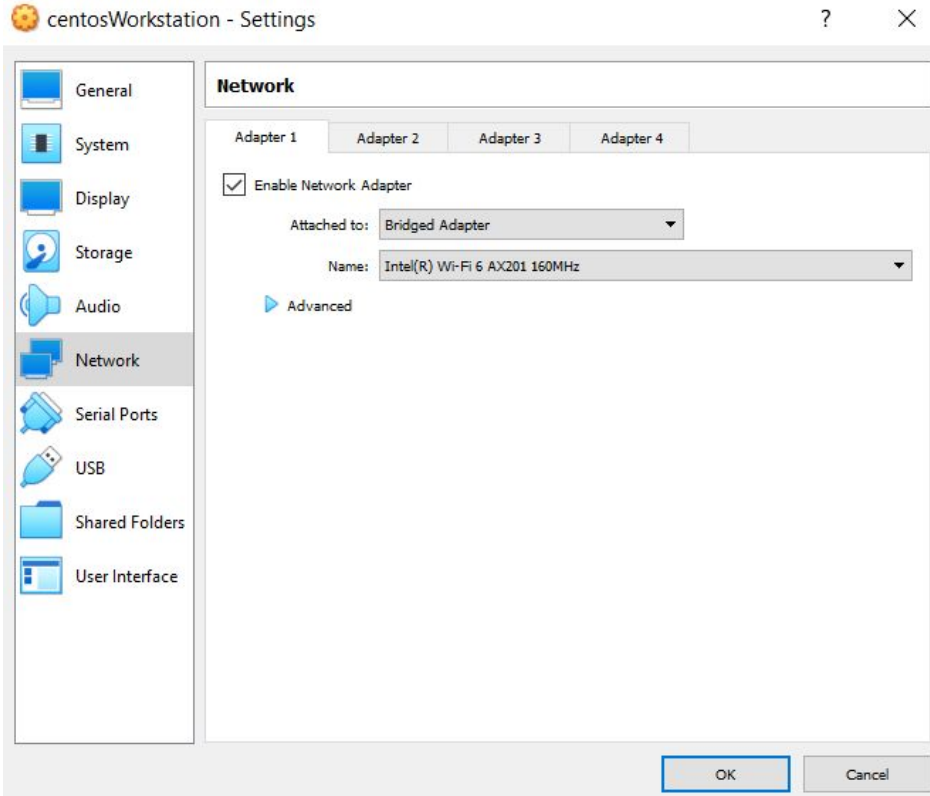
Under System => Processor => Increase the Processor count => 2



# Storage => Controller IDE => Empty => Choose ISO file



# Network => Adapter 1 => Bridged Adapter => Click OK



# Verify the settings then Click Start



Oracle VM VirtualBox Manager

File Machine Help

Tools

centosWorkstation 2.6 Powered Off

**General**

Name: centosWorkstation  
Operating System: Linux 2.6 / 3.x / 4.x (64-bit)

**System**

Base Memory: 4096 MB  
Processors: 2  
Boot Order: Optical, Hard Disk  
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization

**Display**

Video Memory: 16 MB  
Graphics Controller: VM SVGA  
Remote Desktop Server: Disabled  
Recording: Disabled

**Storage**

Controller: IDE  
IDE Secondary Device 0: [Optical Drive] CentOS-Stream-8-x86\_64-latest-dvd1.iso (10.32 GB)  
Controller: SATA  
SATA Port 0: centosWorkstation.vdi (Normal, 32.00 GB)

**Audio**

Host Drivers: Windows DirectSound  
Controller: ICH AC97

**Network**

Adapter 1: Intel PRO/1000 MT Desktop (Bridged Adapter, Intel(R) Wi-Fi 6 AX201 160MHz)

**USB**

USB Controller: OHCI  
Device Filters: 0 (0 active)

**Shared folders**

None

**Description**

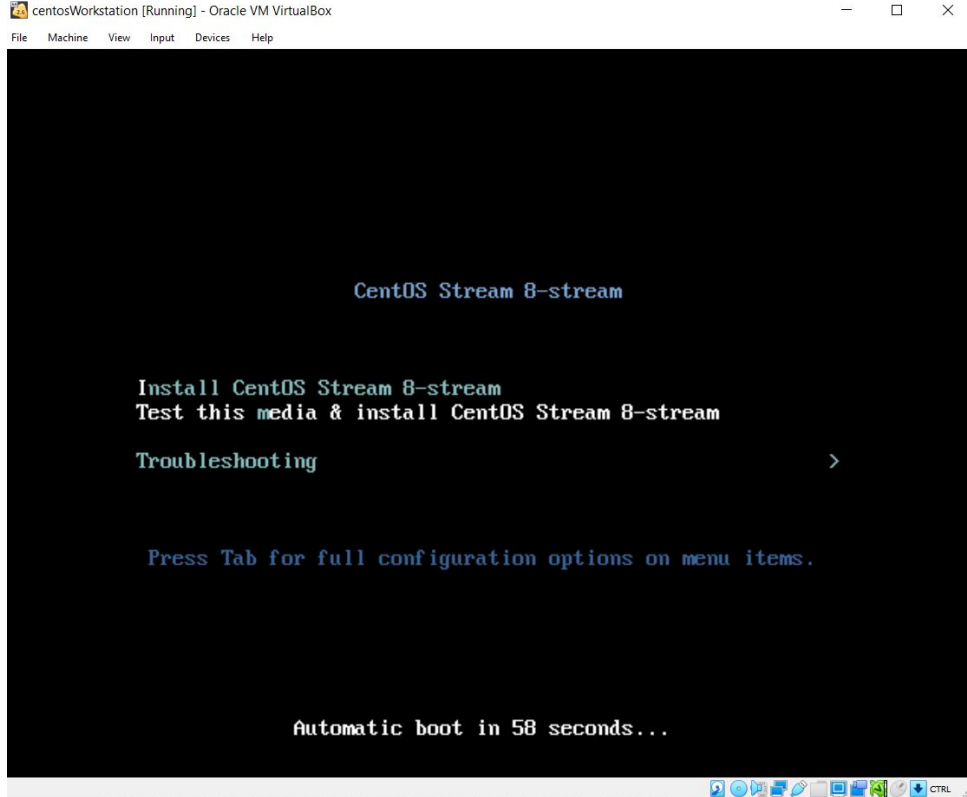
None

**Preview**

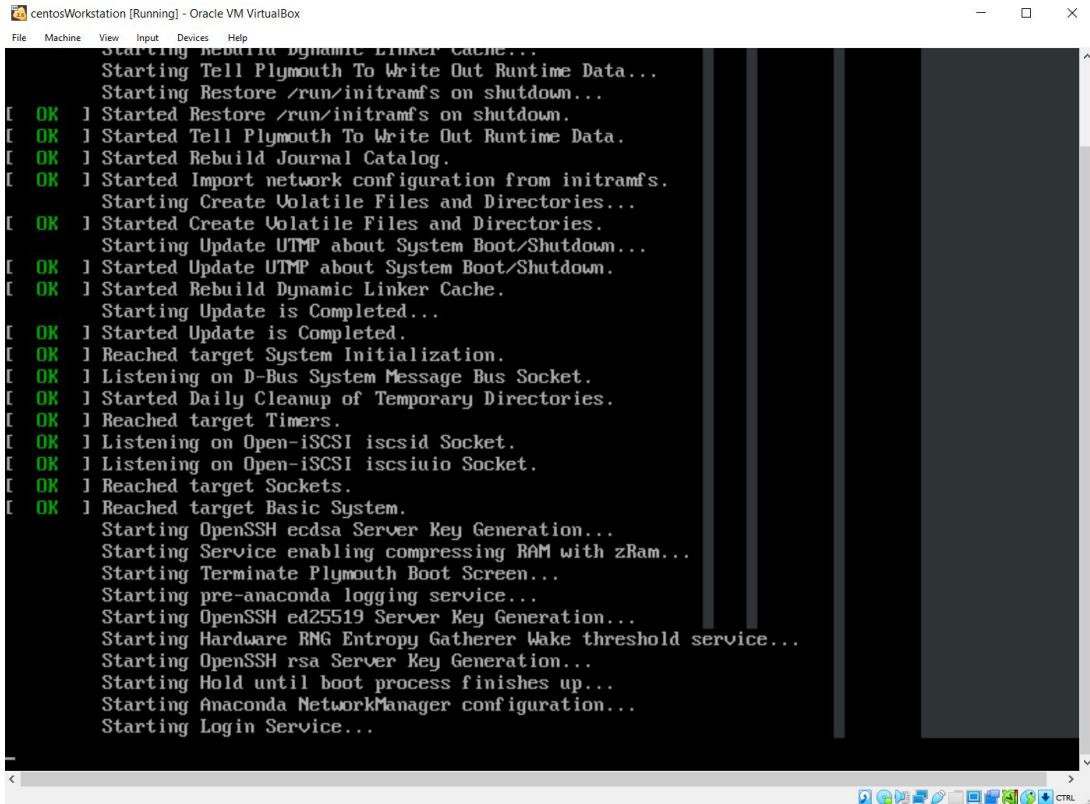
centosWorkstation



# Hit Enter Once we get this page



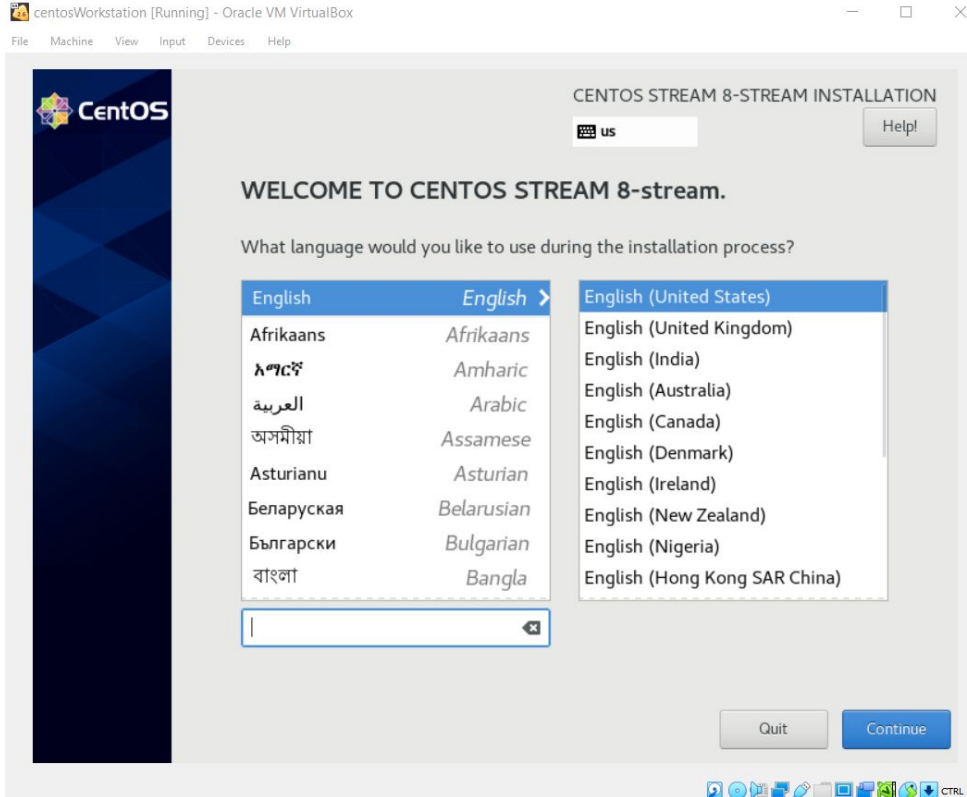
# Wait for the System to load



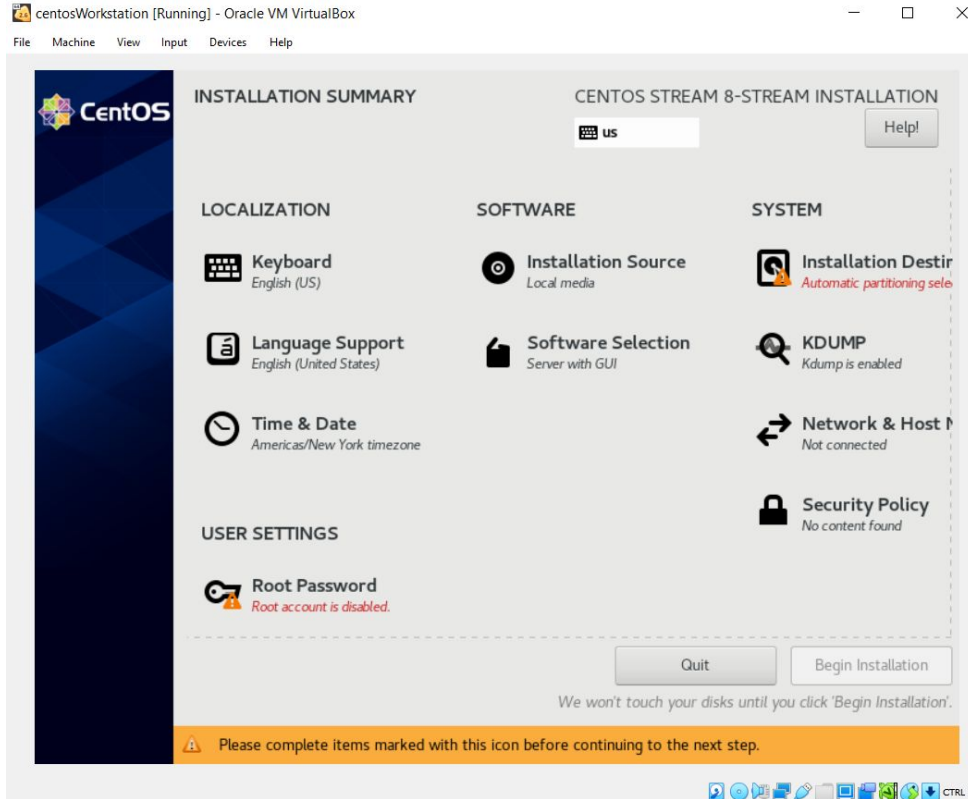
The screenshot shows a terminal window titled "centosWorkstation [Running] - Oracle VM VirtualBox". The terminal displays a series of boot logs for a CentOS system. The logs indicate that the system has successfully completed the boot process and reached the "Basic System" target. The logs include messages about starting various services, such as "OpenSSH", "Anaconda NetworkManager", and "Login Service". The terminal output is as follows:

```
Starting Rebuild Dynamic Linker Cache...
Starting Tell Plymouth To Write Out Runtime Data...
Starting Restore /run/initramfs on shutdown...
[ OK ] Started Restore /run/initramfs on shutdown.
[ OK ] Started Tell Plymouth To Write Out Runtime Data.
[ OK ] Started Rebuild Journal Catalog.
[ OK ] Started Import network configuration from initramfs.
Starting Create Volatile Files and Directories...
[ OK ] Started Create Volatile Files and Directories.
Starting Update UTMP about System Boot/Shutdown...
[ OK ] Started Update UTMP about System Boot/Shutdown.
[ OK ] Started Rebuild Dynamic Linker Cache.
Starting Update is Completed...
[ OK ] Started Update is Completed.
[ OK ] Reached target System Initialization.
[ OK ] Listening on D-Bus System Message Bus Socket.
[ OK ] Started Daily Cleanup of Temporary Directories.
[ OK ] Reached target Timers.
[ OK ] Listening on Open-iSCSI iscsid Socket.
[ OK ] Listening on Open-iSCSI iscsiui Socket.
[ OK ] Reached target Sockets.
[ OK ] Reached target Basic System.
Starting OpenSSH ecdsa Server Key Generation...
Starting Service enabling compressing RAM with zRam...
Starting Terminate Plymouth Boot Screen...
Starting pre-anaconda logging service...
Starting OpenSSH ed25519 Server Key Generation...
Starting Hardware RNG Entropy Gatherer Wake threshold service...
Starting OpenSSH rsa Server Key Generation...
Starting Hold until boot process finishes up...
Starting Anaconda NetworkManager configuration...
Starting Login Service...
```

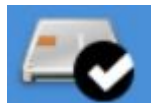
# Choose the Language => Continue



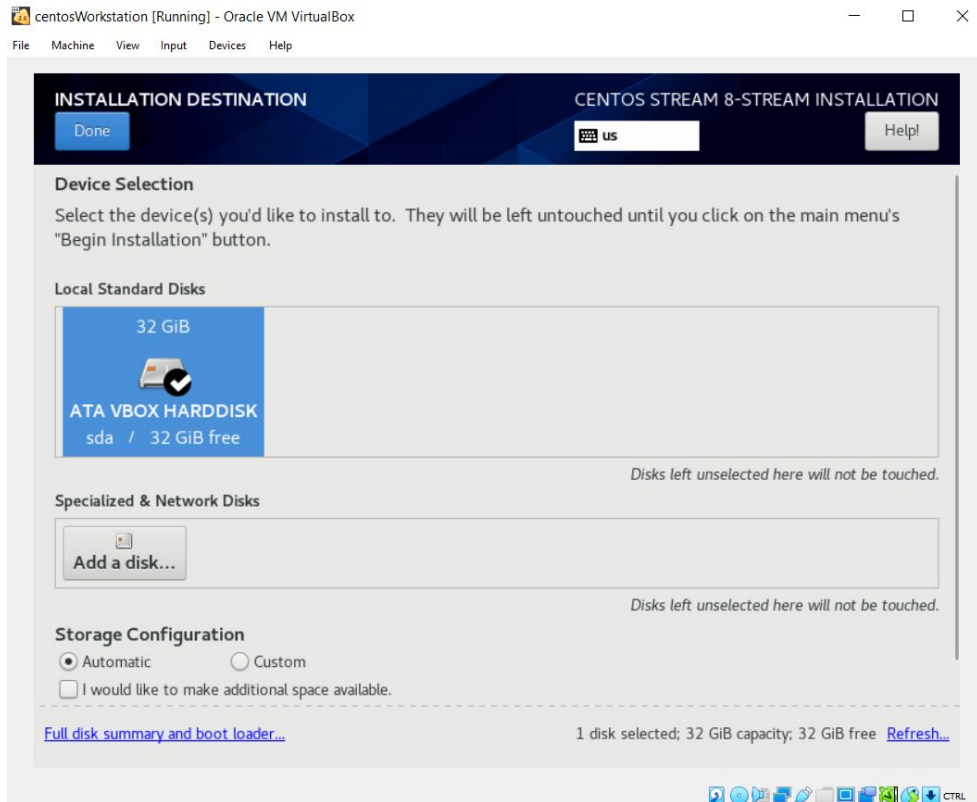
# Click on Installation Destination



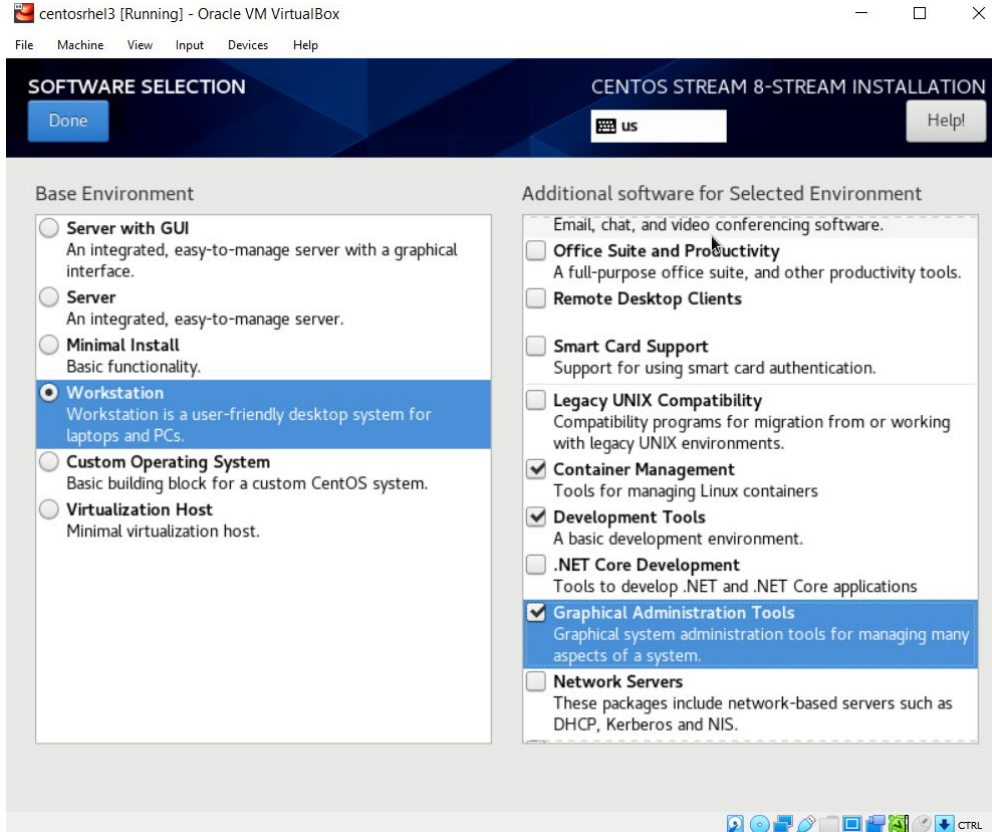
# Click on the Disk



# Click Done



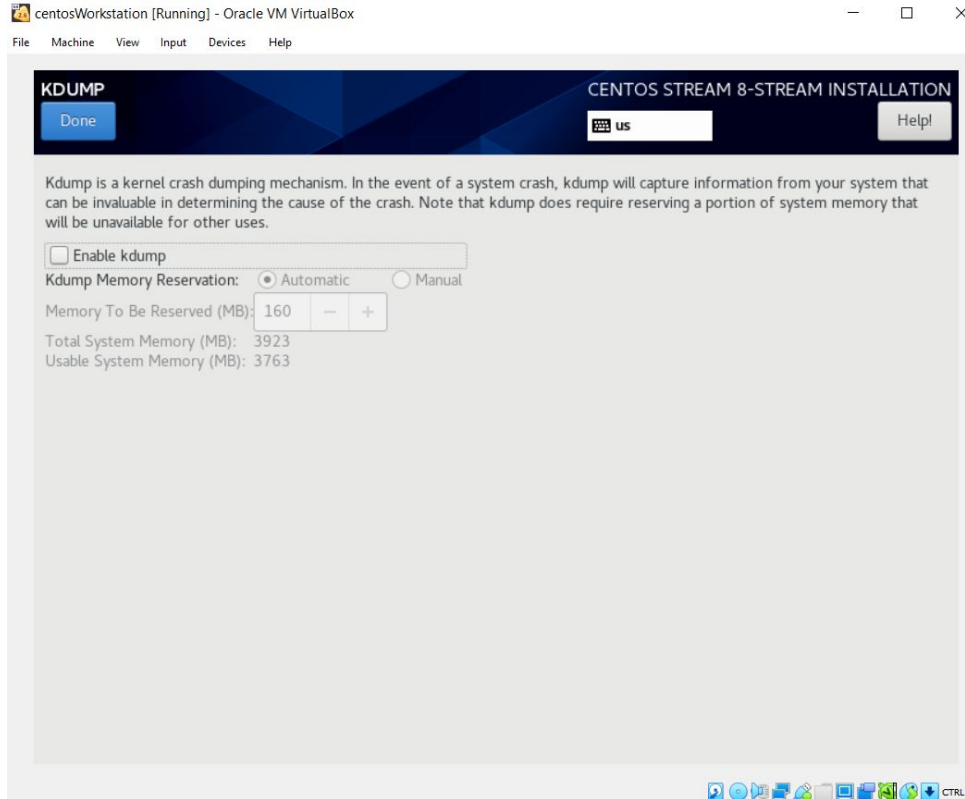
# Click on Software Selection => select as shown below



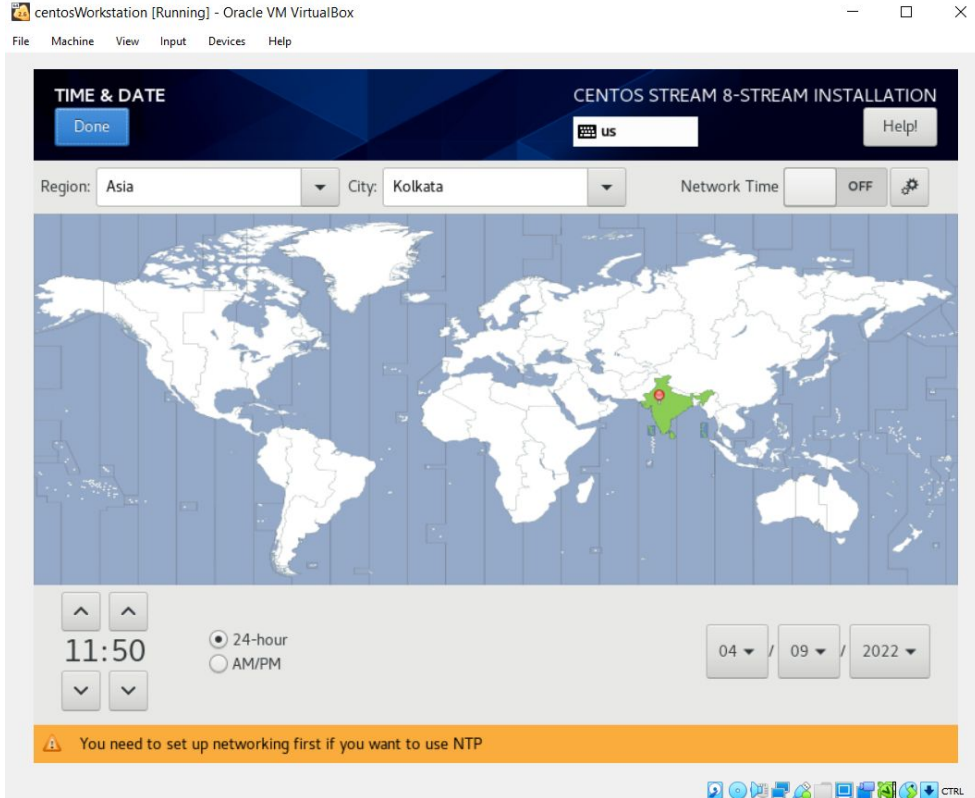
Choose Workstation => Additional Software => Choose the following

- Container Management
- Development Tools
- Graphical Administration Tools

# Disable the kdump as shown below and Click Done

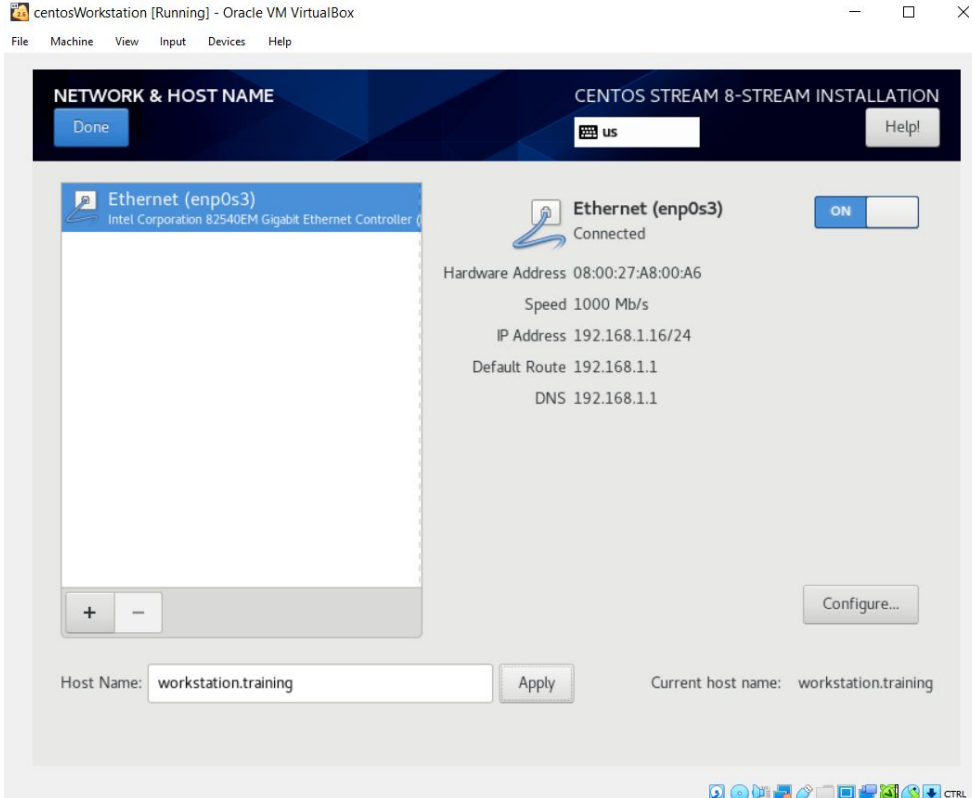


# Choose the Time zone and Click Done





# Choose Network and Hostname

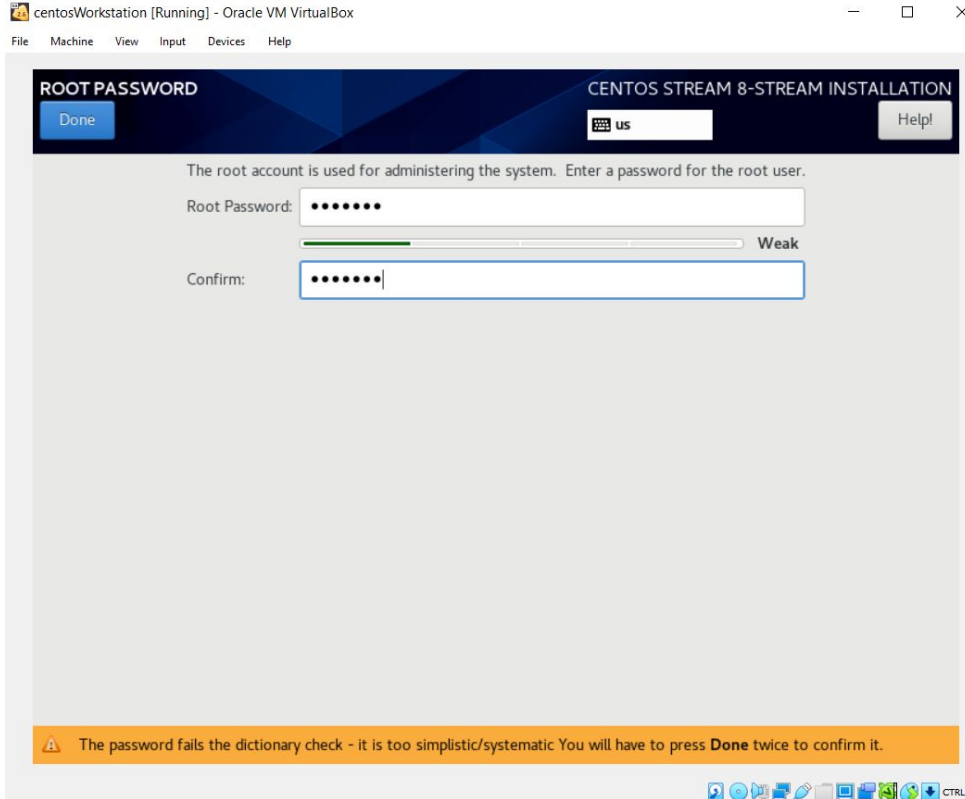


Enable the Ethernet

Choose the Host Name at the bottom

Click Done

# Choose the Root Password , Click Done



# Create User as shown below

centosWorkstation [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

## CREATE USER

CENTOS STREAM 8-STREAM INSTALLATION

Done us Help!

Full name

User name

☒ Make this user administrator


☒ Require a password to use this account

Password

Weak

Confirm password

Advanced...

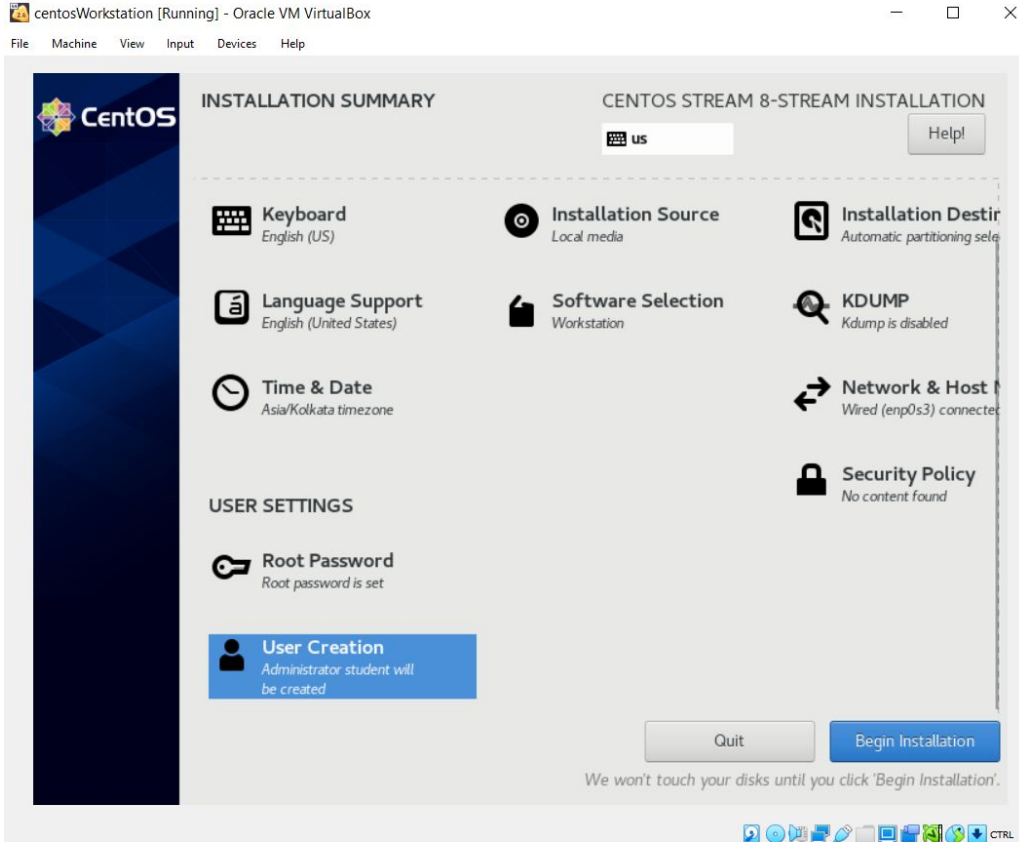
 The password contains the user name in some form You will have to press **Done** twice to confirm it.

CTRL

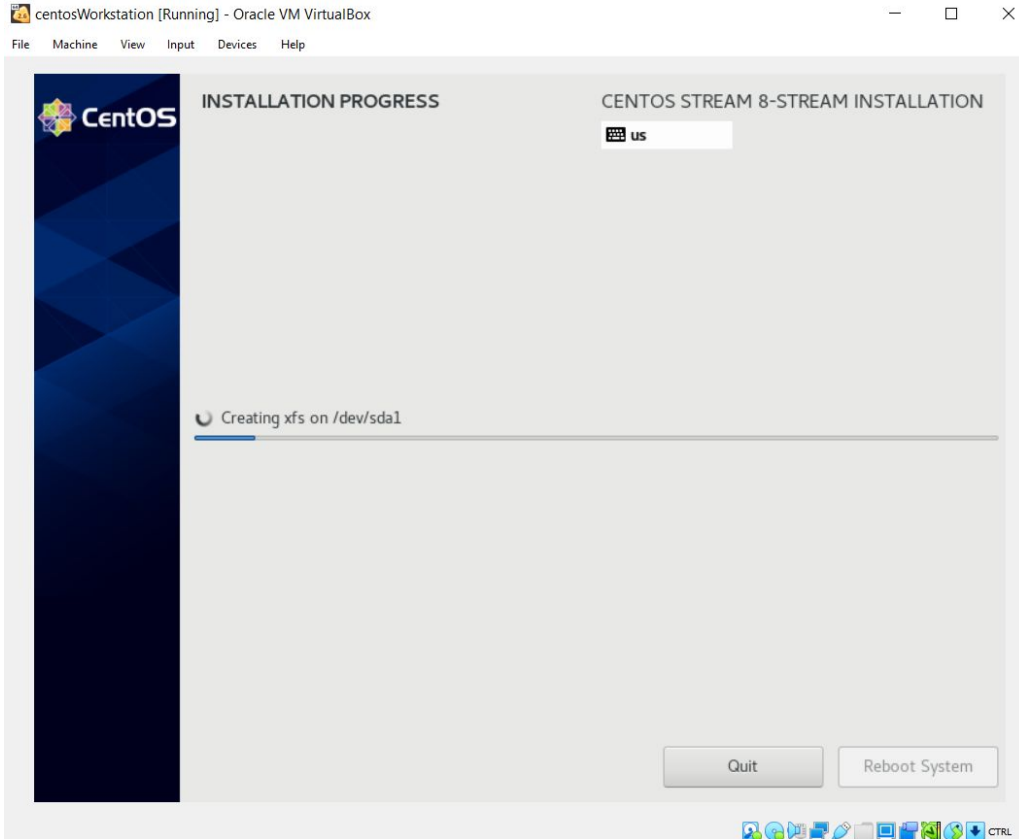
Select Make this user administrator

Set the password for this user

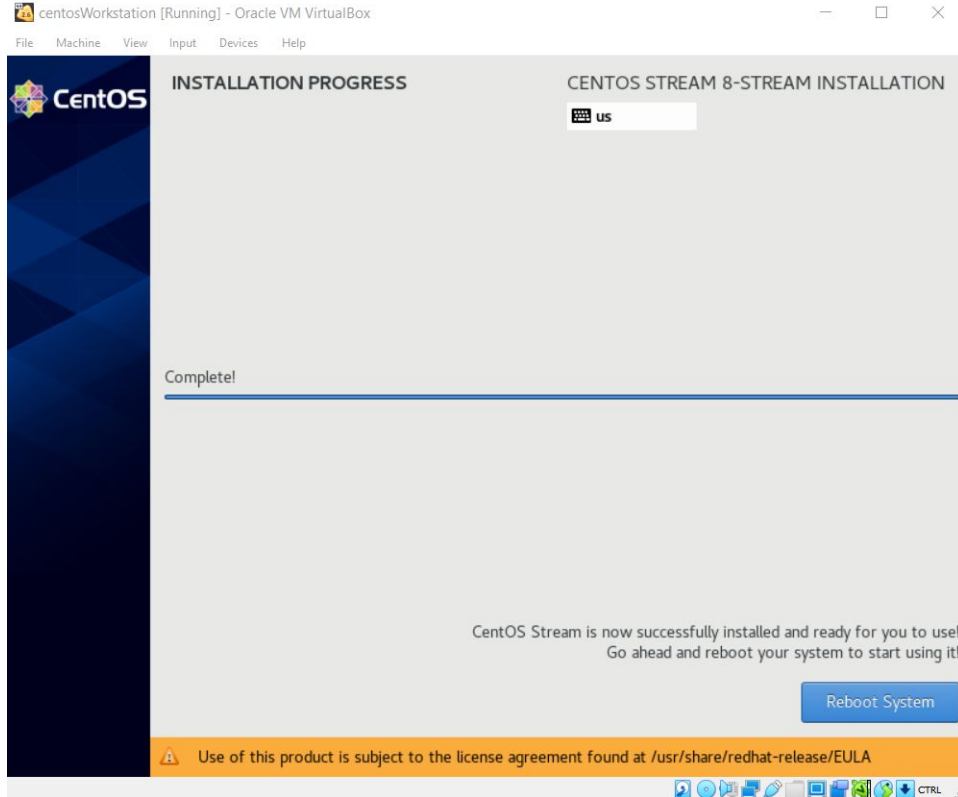
# Review all the changes and then Click Begin Installation



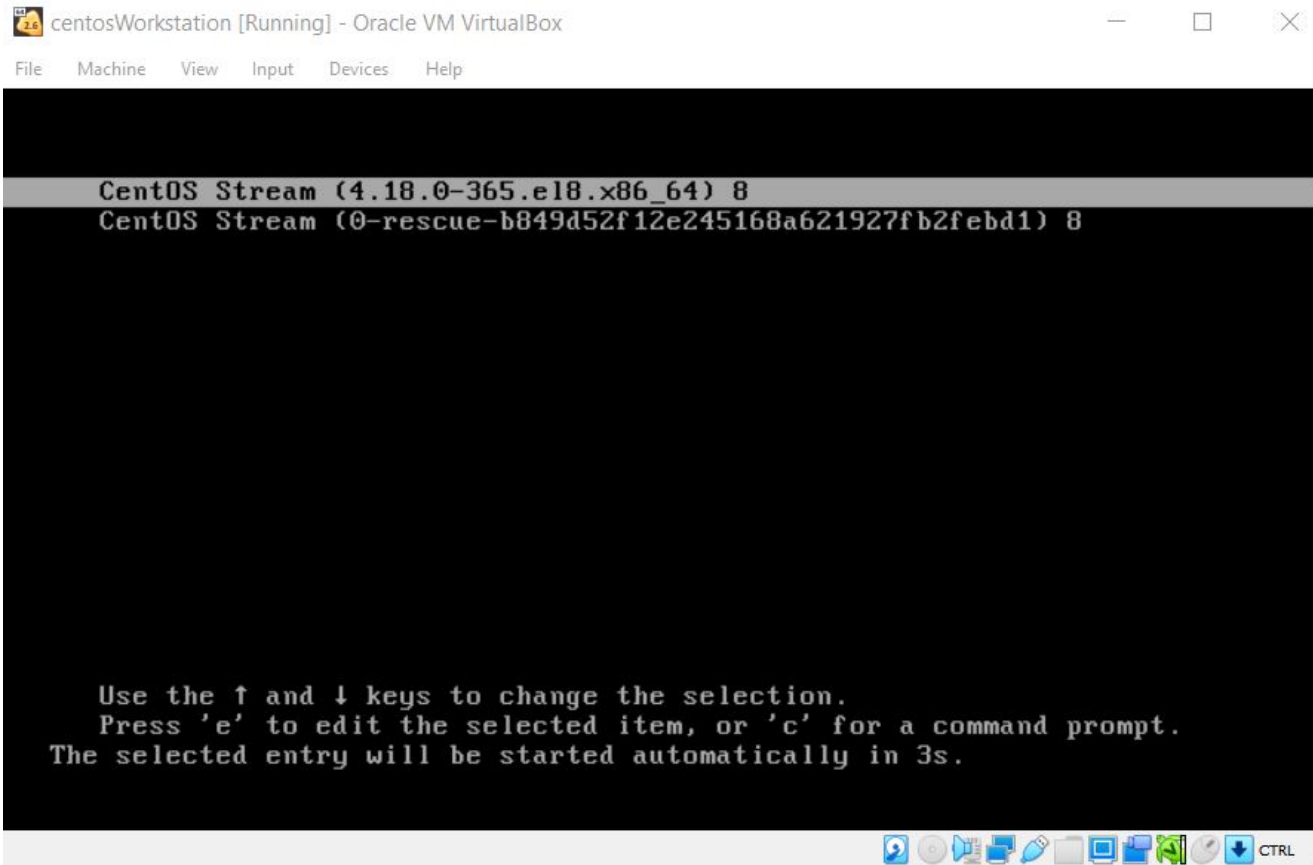
# Wait for the Installation to Complete



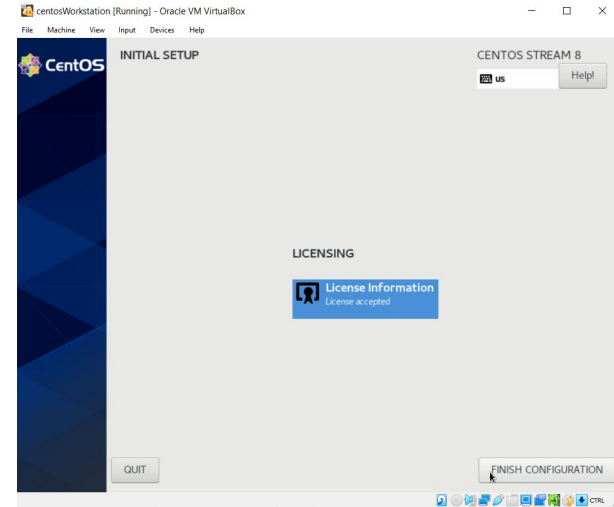
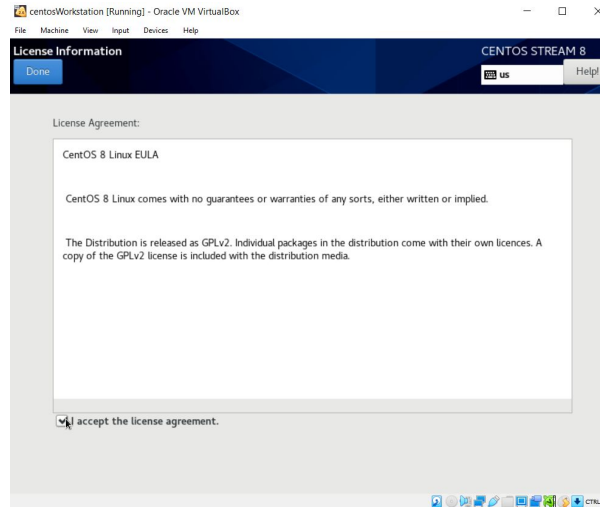
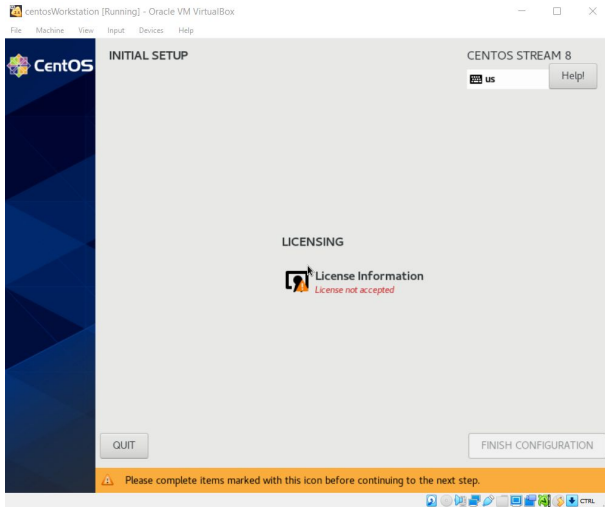
# Click Reboot once the installation finishes



# These are the linux kernels, hit enter

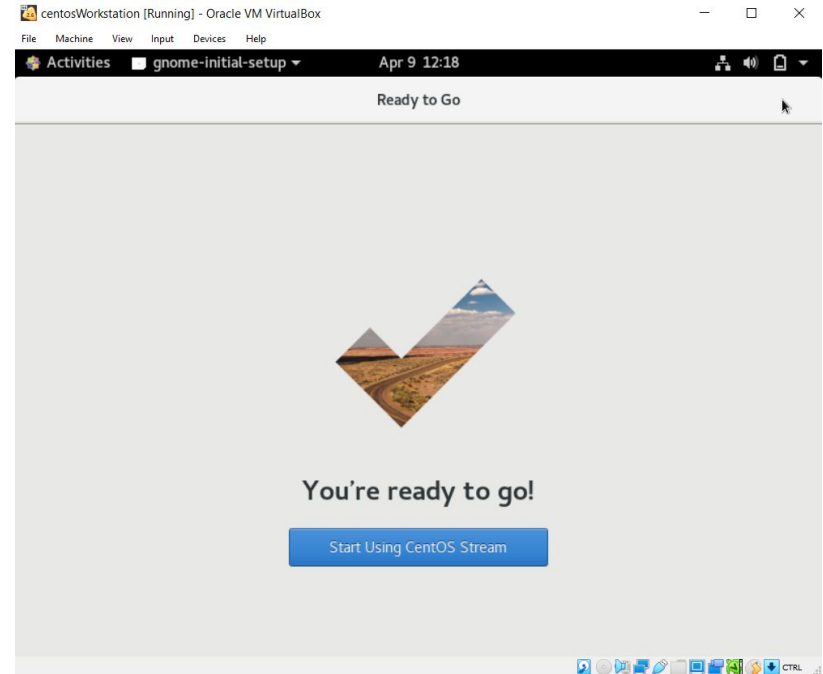
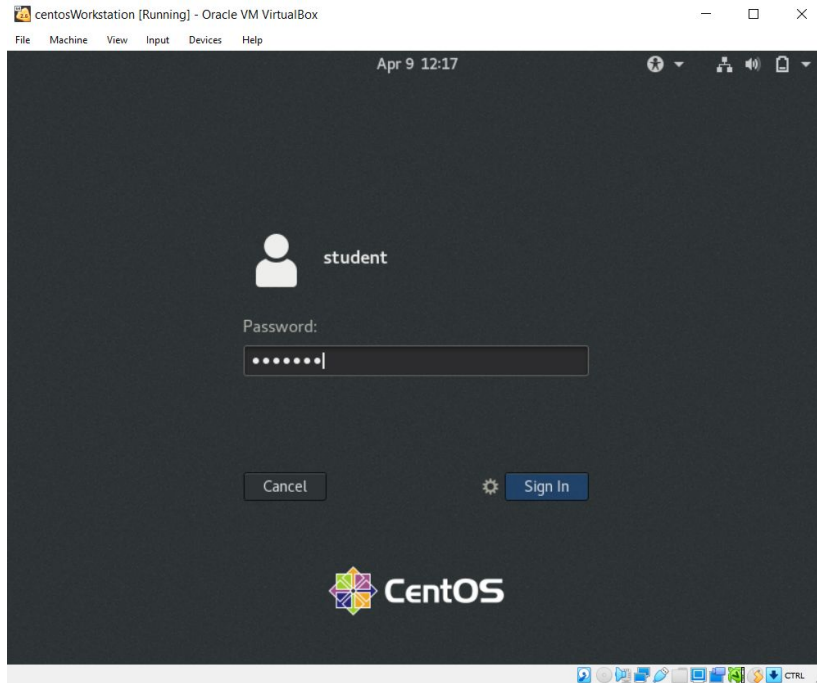


# Accept the license agreement and Finish Configuration



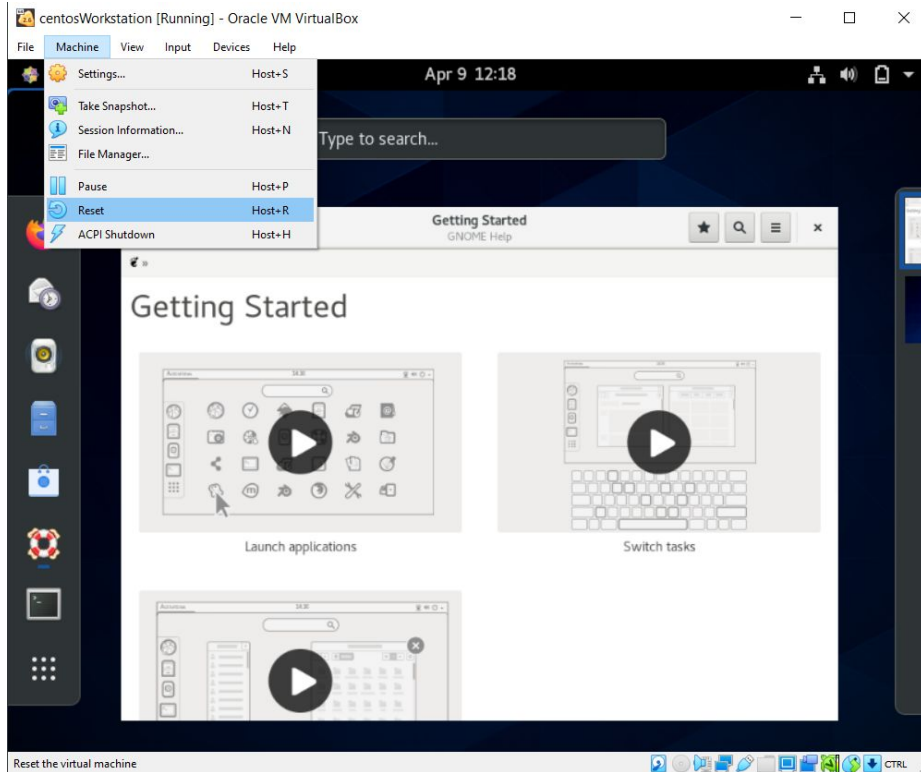


# Login with the student credentials and complete the initial screen prompts



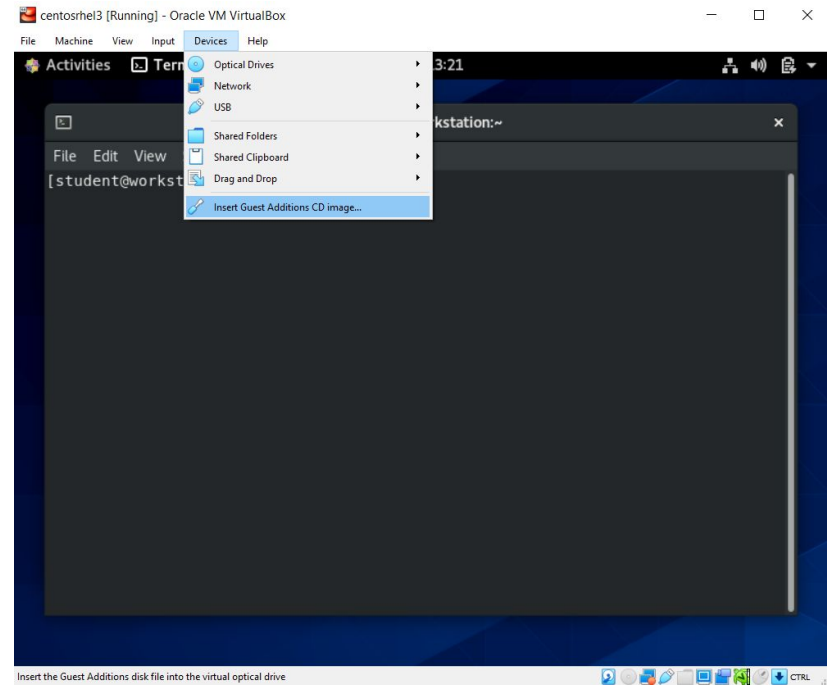
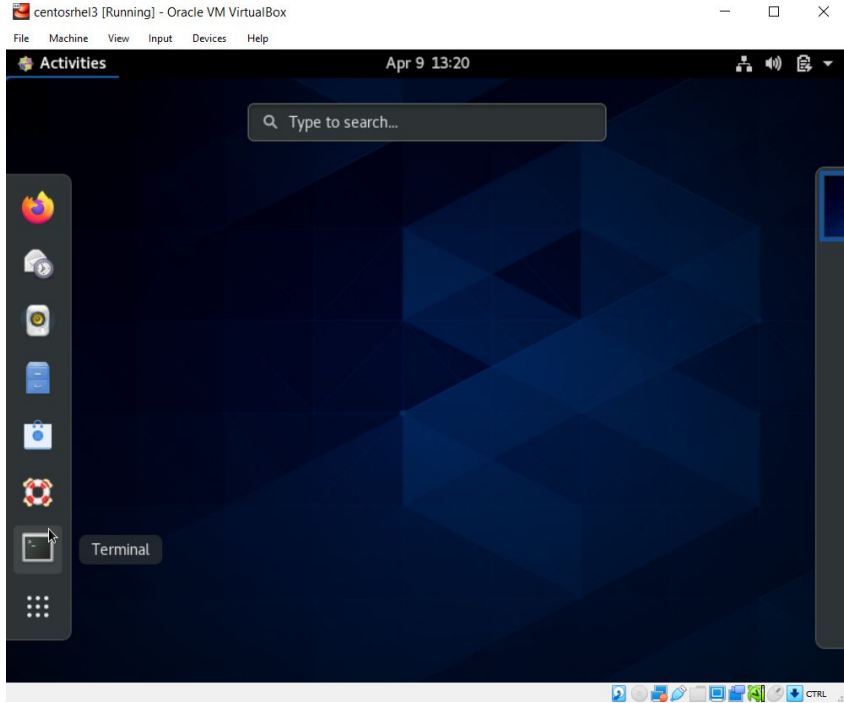
Reboot the machine

# Reboot the machine - If it hangs

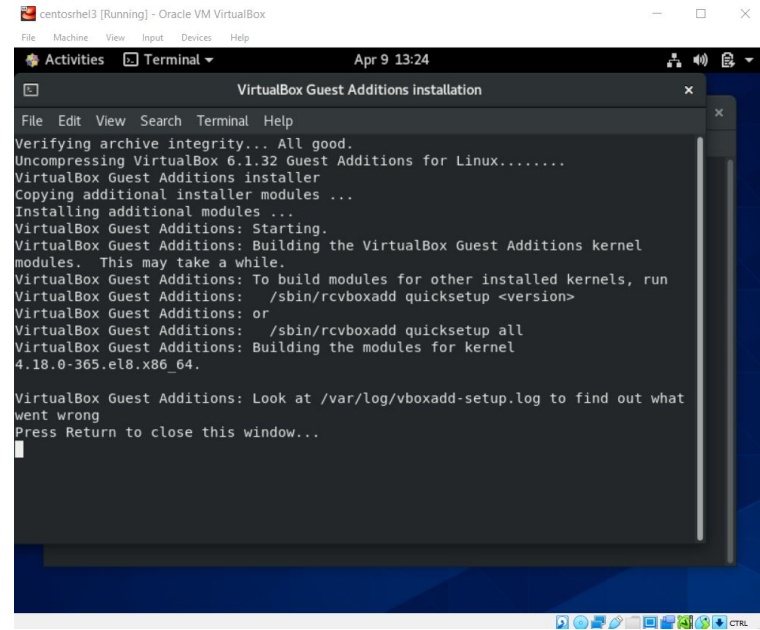
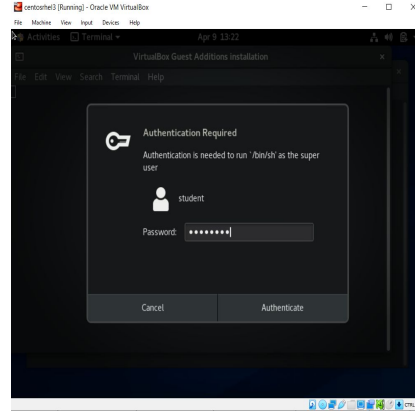
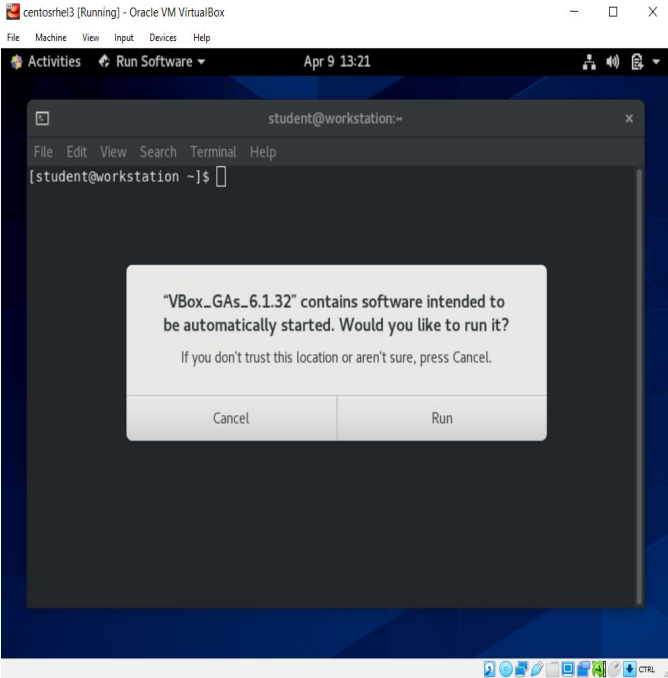


Machine => Reset

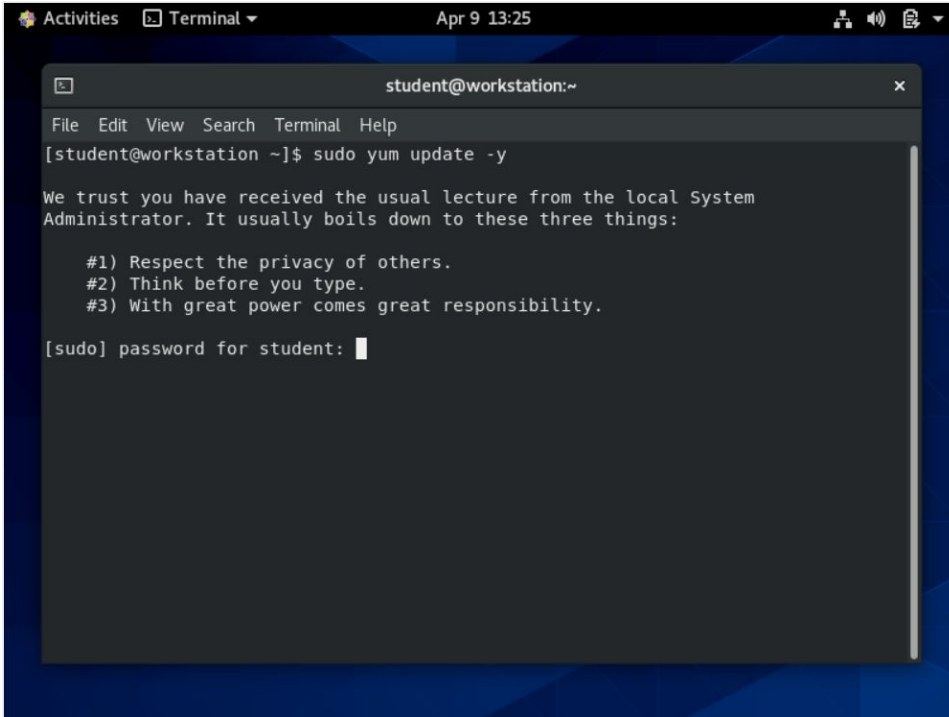
Install the VirtualBox guest install so we can adjust screen size and mouse cursor will not be locked to the VM



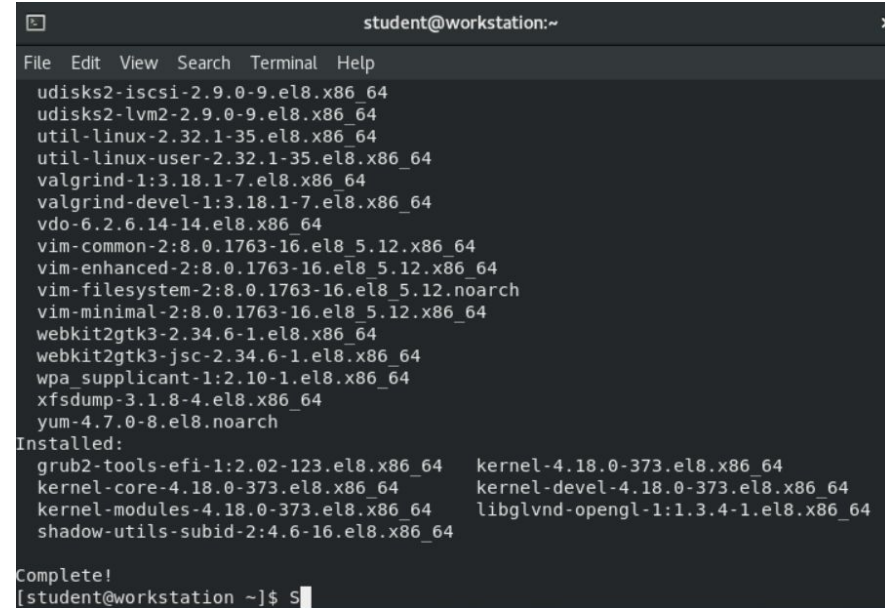
# Click Run, enter Student credentials



# Install the latest updates as shown below

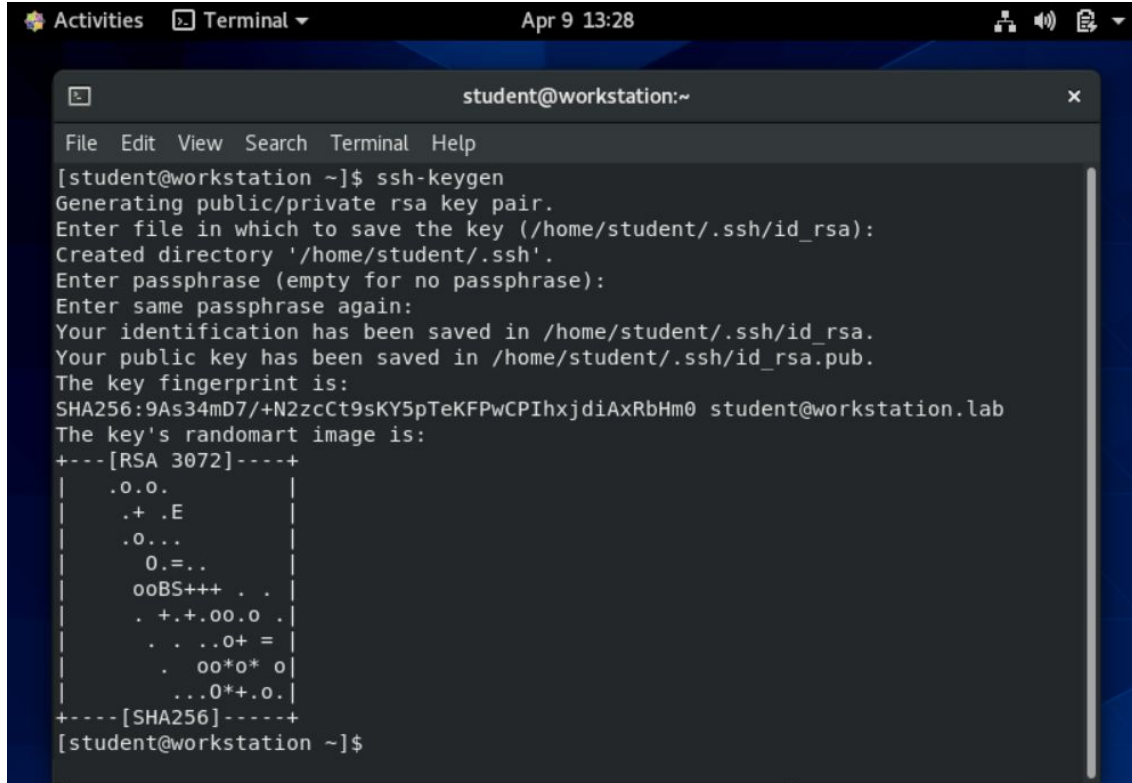


```
student@workstation:~  
File Edit View Search Terminal Help  
[student@workstation ~]$ sudo yum update -y  
  
We trust you have received the usual lecture from the local System  
Administrator. It usually boils down to these three things:  
  
#1) Respect the privacy of others.  
#2) Think before you type.  
#3) With great power comes great responsibility.  
  
[sudo] password for student: 
```



```
student@workstation:~  
File Edit View Search Terminal Help  
udisks2-iscsi-2.9.0-9.el8.x86_64  
udisks2-lvm2-2.9.0-9.el8.x86_64  
util-linux-2.32.1-35.el8.x86_64  
util-linux-user-2.32.1-35.el8.x86_64  
valgrind-1:3.18.1-7.el8.x86_64  
valgrind-devel-1:3.18.1-7.el8.x86_64  
vdo-6.2.6.14-14.el8.x86_64  
vim-common-2:8.0.1763-16.el8_5.12.x86_64  
vim-enhanced-2:8.0.1763-16.el8_5.12.x86_64  
vim-filesystem-2:8.0.1763-16.el8_5.12.noarch  
vim-minimal-2:8.0.1763-16.el8_5.12.x86_64  
webkit2gtk3-2.34.6-1.el8.x86_64  
webkit2gtk3-jsc-2.34.6-1.el8.x86_64  
wpa_supplicant-1:2.10-1.el8.x86_64  
xfsdump-3.1.8-4.el8.x86_64  
yum-4.7.0-8.el8.noarch  
Installed:  
grub2-tools-efi-1:2.02-123.el8.x86_64    kernel-4.18.0-373.el8.x86_64  
kernel-core-4.18.0-373.el8.x86_64      kernel-devel-4.18.0-373.el8.x86_64  
kernel-modules-4.18.0-373.el8.x86_64   libglvnd-opengl-1:1.3.4-1.el8.x86_64  
shadow-utils-subid-2:4.6-16.el8.x86_64  
  
Complete!  
[student@workstation ~]$ S
```

# Enter the command for generating ssh-keypair

A terminal window titled 'student@workstation:~' with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Apr 9 13:28). The terminal shows the execution of the 'ssh-keygen' command. It prompts for a file name, creates a directory, asks for a passphrase, and displays the key fingerprint and a randomart image. The randomart image is a grid of characters representing the key's fingerprint. The terminal ends with the prompt '[student@workstation ~]\$'.

```
student@workstation:~  
File Edit View Search Terminal Help  
[student@workstation ~]$ ssh-keygen  
Generating public/private rsa key pair.  
Enter file in which to save the key (/home/student/.ssh/id_rsa):  
Created directory '/home/student/.ssh'.  
Enter passphrase (empty for no passphrase):  
Enter same passphrase again:  
Your identification has been saved in /home/student/.ssh/id_rsa.  
Your public key has been saved in /home/student/.ssh/id_rsa.pub.  
The key fingerprint is:  
SHA256:9As34mD7/+N2zcCt9sKY5pTeKFPwCPIhxjdiAxRbHm0 student@workstation.lab  
The key's randomart image is:  
+---[RSA 3072]---+  
| .o.o. |  
| .+ .E |  
| .o... |  
| 0.=.. |  
| ooBS+++ . |  
| . +.+oo.o |  
| . . .o+ = |  
| . oo*o* o |  
| ...0*+.o. |  
+----[SHA256]-----+  
[student@workstation ~]$
```

ssh-keygen

Hit enter

Hit enter again

Hit enter again

# Enter the following command

```
[student@workstation ~]$ ssh-copy-id localhost
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter
out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompt
ed now it is to install the new keys
student@localhost's password:

Number of key(s) added: 1

Now try logging into the machine, with:  "ssh 'localhost'"
and check to make sure that only the key(s) you wanted were added.

[student@workstation ~]$
```

ssh-copy-id localhost

enter student password