

Arsenia Suero

Week 1 – Fall 2021 Semester

Getting my Systems Set up.

Debian Server 11.0

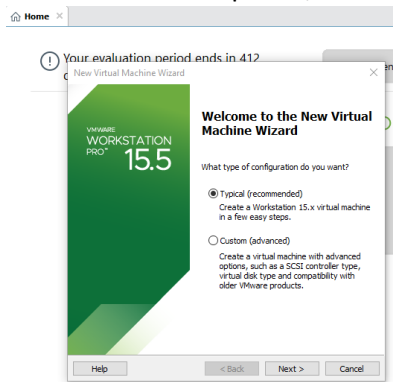
- Get the distro. You can get it through the link below.

<https://www.debian.org/CD/http-ftp/>

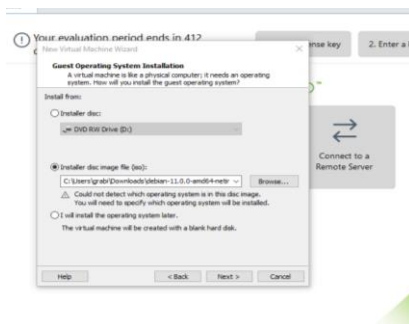
After download, the iso, go to VMware Workstation and Starts by clicking on create a new virtual machine.



Pick one of these options, I will recommend The typical, Though it is going to depend on your needs.



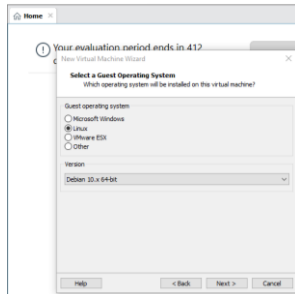
Select where is located your iso, the server image. I have my iso in my Dowload folder.



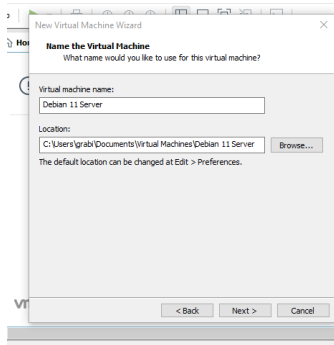
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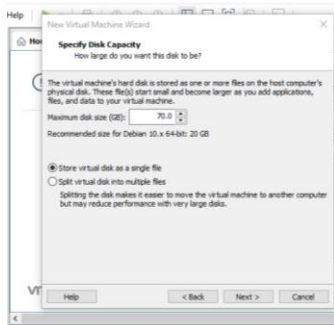
Select the operative system name and version, in our case we pick the following, Linux – Debian 10. x 64 bit. Why Debian 10. x? because the latest version of Debian does not appear in this version of VMware Workstation.



You can pick any name for your virtual machine name, I recommend you choose a meaningful name, which means to add a name according to the distro and version you are installing.



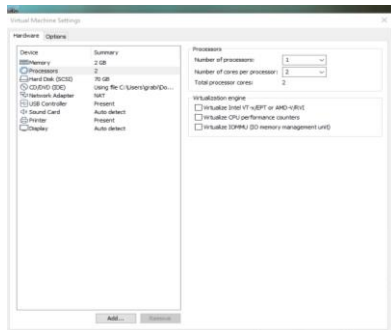
Select the disk capacity according to your needs. I will store the virtual disk as a single file.



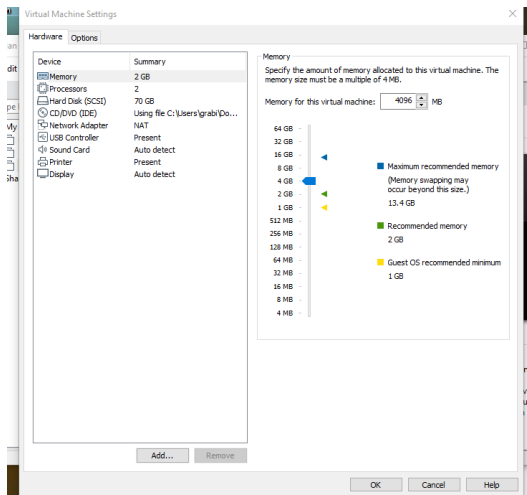
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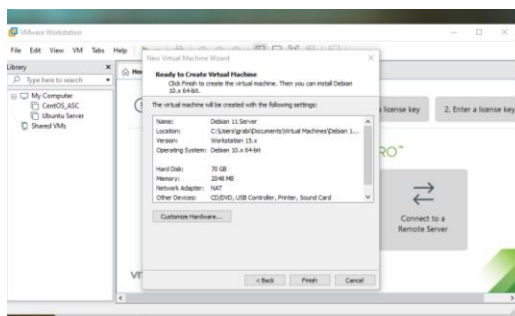
Select the number of cores per procesors you want, I selected 2.



This next screen allows you to select the memory capacity for your virtual machine. I selected 4096 MB.



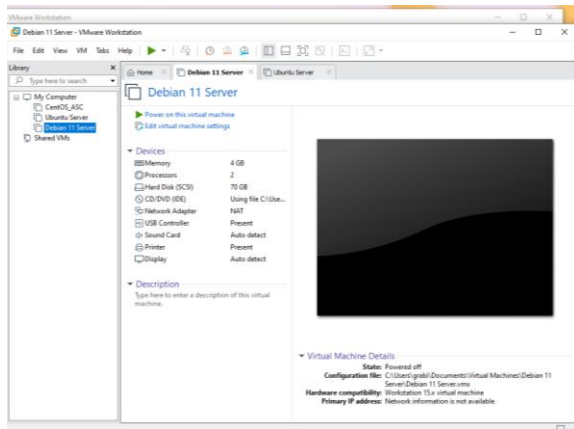
The screen below is the las screen for creating our Virtual machine and it shows us a system summary. We just click **finish**.



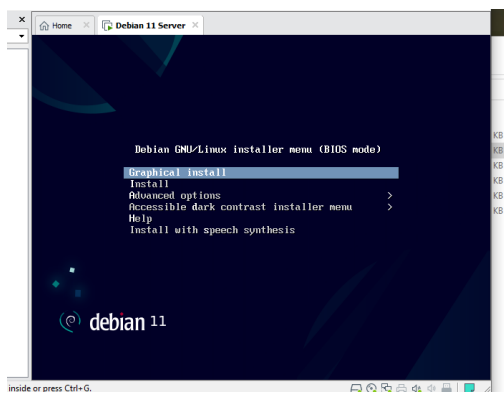
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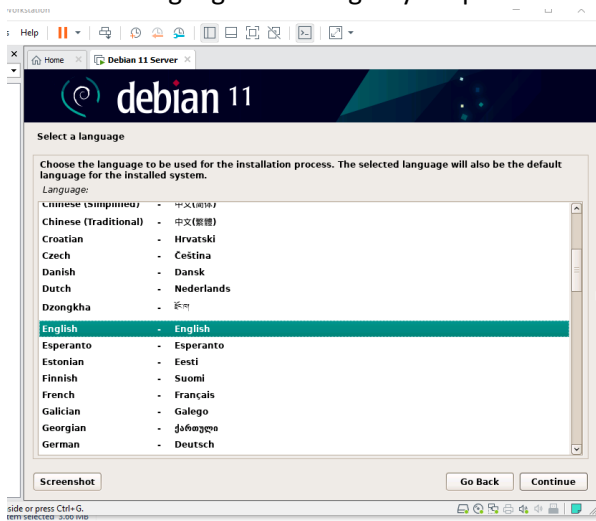
Now, we click The green play button to power on your machine. Be sure that you are in the right name of your virtual machine if you have more than one virtual machines available.



As soon as you click the green power on button, it will show you the next screen after few seconds. In there you will choose **graphical install**



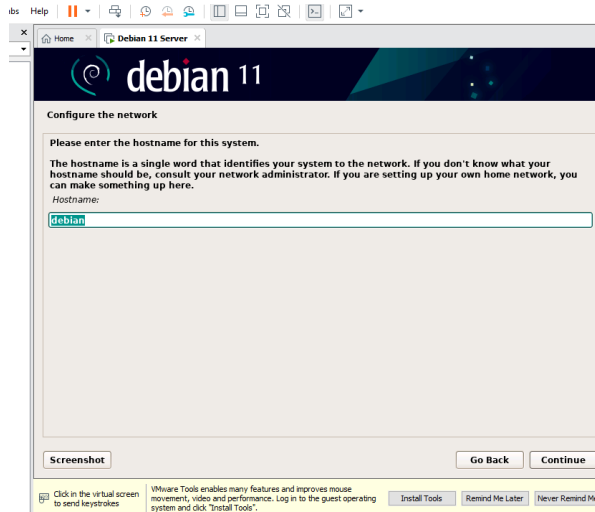
Select the language according to your preferences. Mine is English.



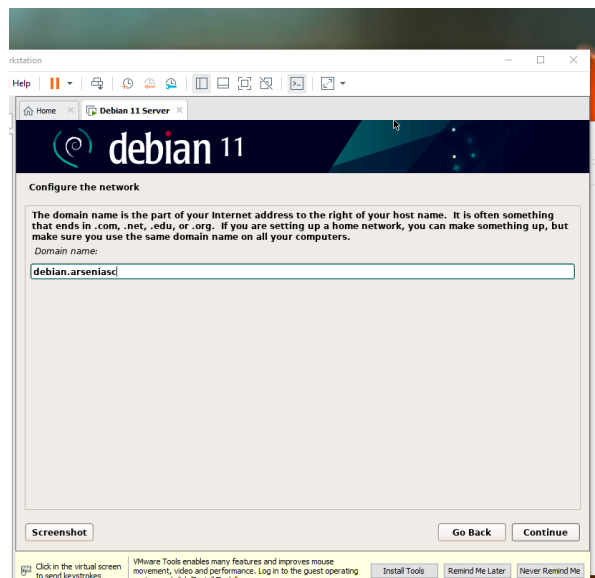
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How do you want to be identified in the network? That is what you have to put in the hostname.



Select the domain name. the domain name is that eazy name that is eazy to you and other remember you and is associated with a physical IP address on the Internet.



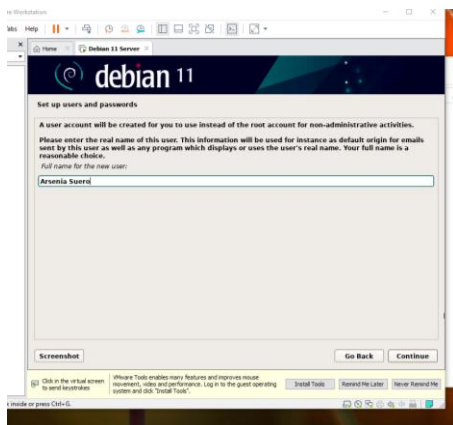
Select a secure password for the root system administrator account. Take a note of your password and put it in a safe place.

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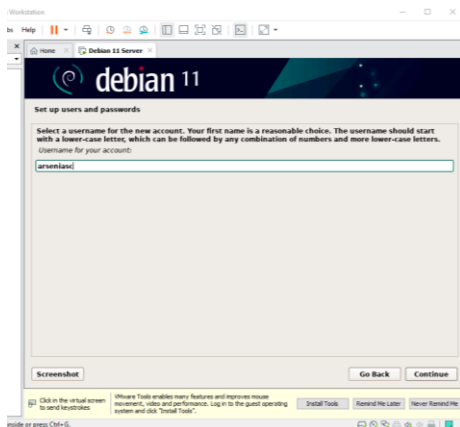
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Please enter the name for the new user you will create



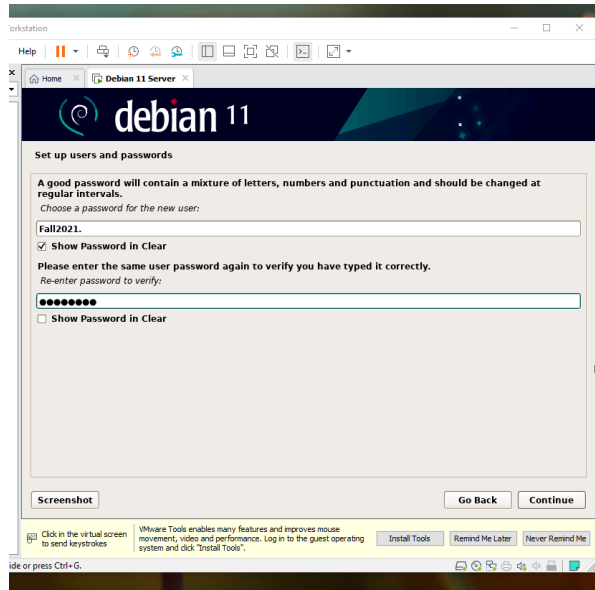
Now, you will create the user username for the new user.



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After creting the username you have to create a password.



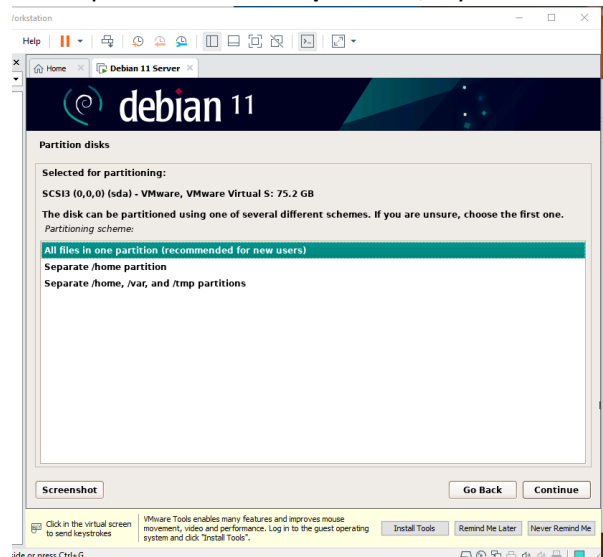
The particion disk is the way how your disk will be split, so, I select **use entire disk**.



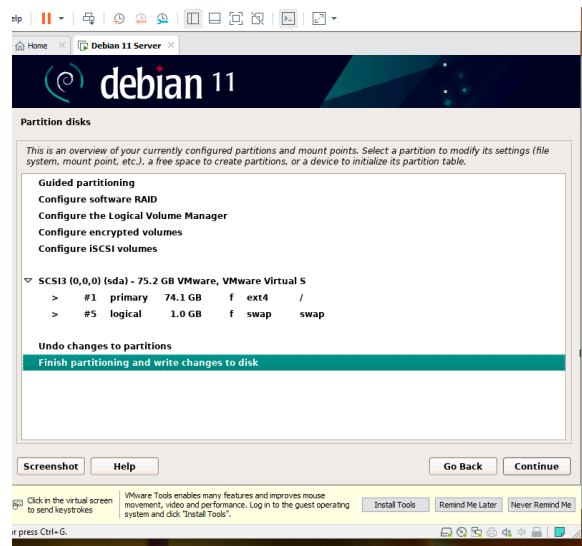
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Select put **all files in one partition**, if you are a new user is the recommended option.



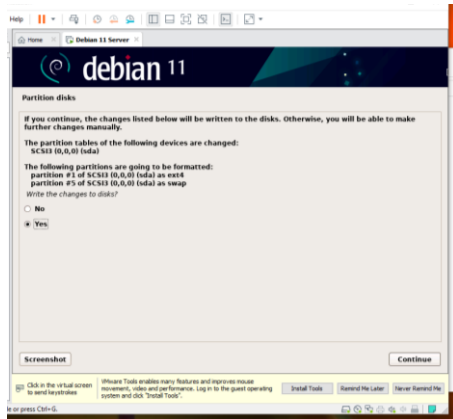
In the next screen you will select the option **Finish Particioning and write changes to disk**.



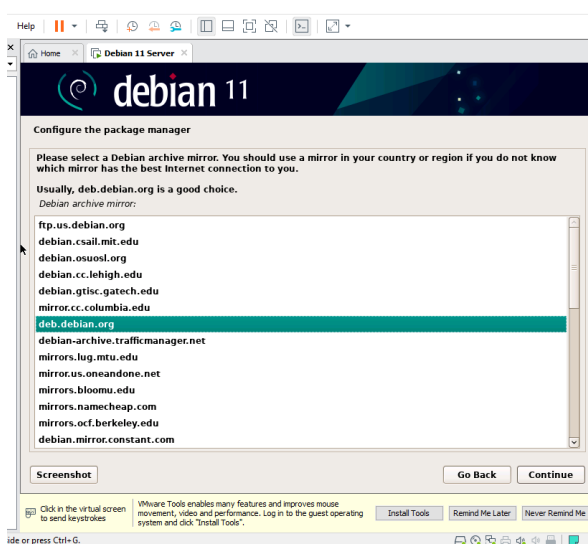
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In this screen you will select **yes**, and click in the **continue**.



Select deb.debian.org



The next screen leaves it blank and clicks on the continue button to proceed.



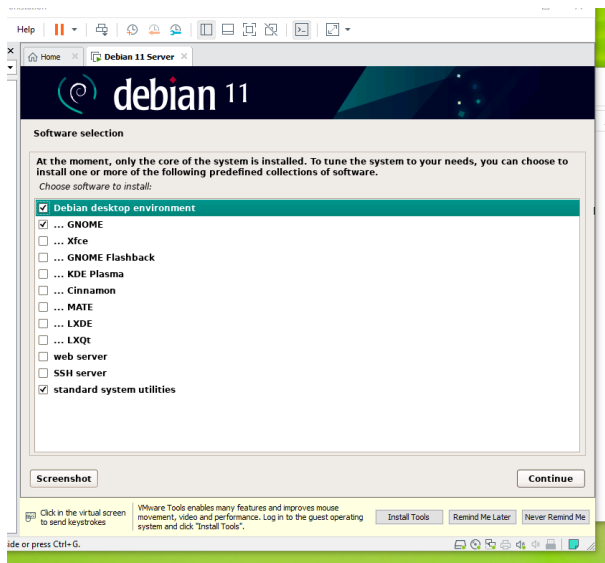
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Check in **yes**, and then **continue**.



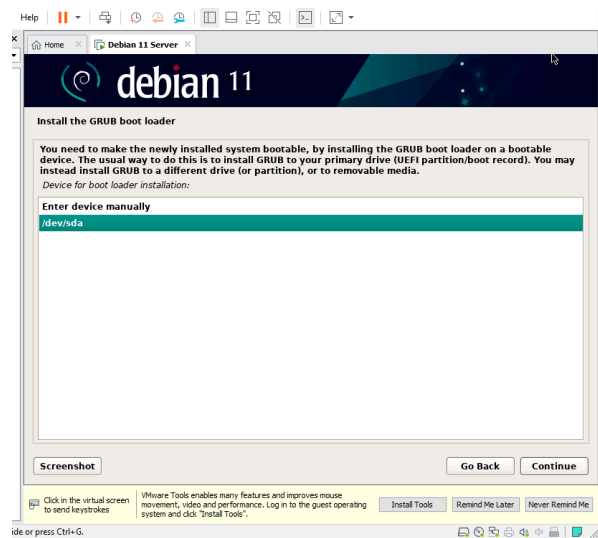
In the next screen you will select a collection of software, select **Debian desktop enviroment**, **gnome**, **standard system utilities**.



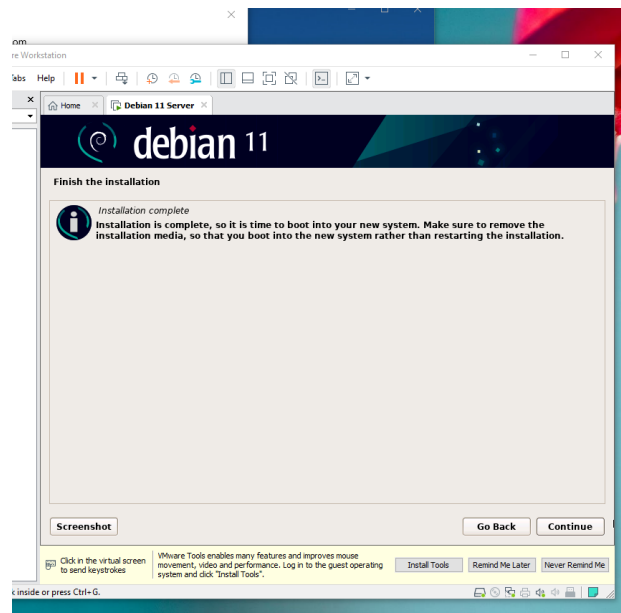
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Select **/dev/sda** to make the newly system bootable.

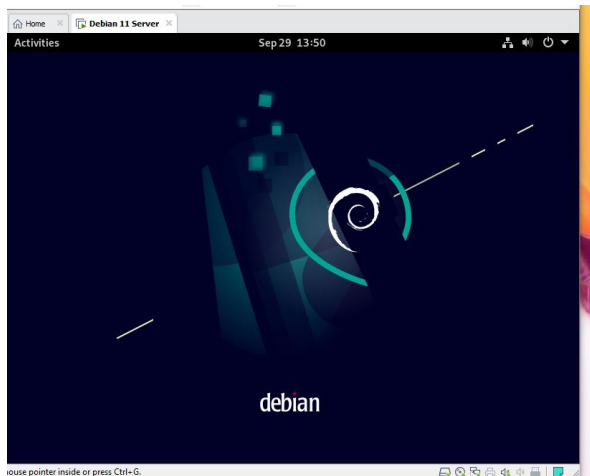


This last screen shows you that your installation is complete. Click continue to restart.



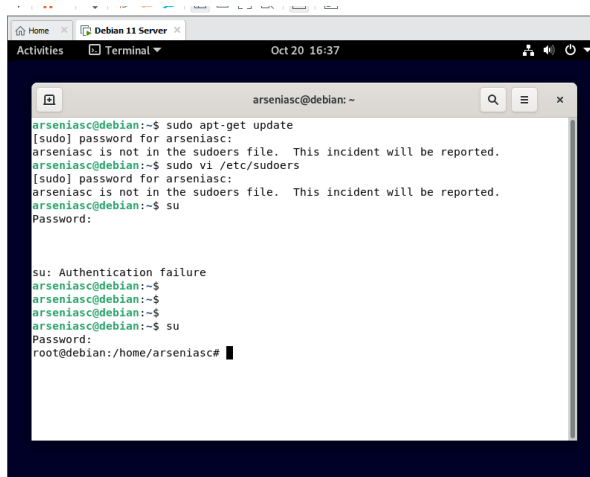
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Adding our user as the superuser

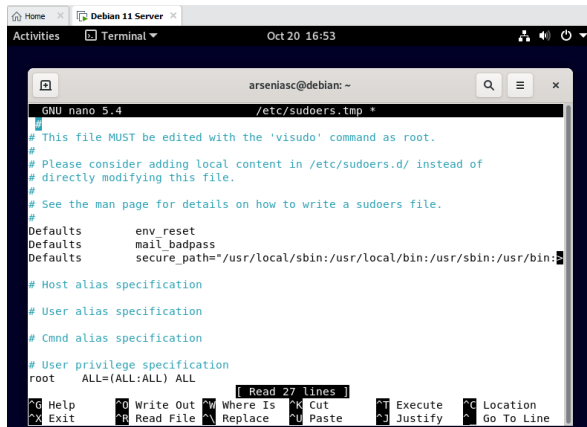
After the terminal is open you will type **su** and then you will be asked for typing your password.



Once you run this command and you use your password then you will type this command **sudo visudo** that will bring you to the following. Using this command, you can see the user privilege. After you check your all the information you will exit this screen by pressing CTRL + C.

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```
GNU nano 5.4 /etc/sudoers.tmp
#
# This file MUST be edited with the 'visudo' command as root.
#
# Please consider adding local content in /etc/sudoers.d/ instead of
# directly modifying this file.
#
# See the man page for details on how to write a sudoers file.
#
Defaults        env_reset
Defaults        mail_badpass
Defaults        secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin"
#
# Host alias specification
#
# User alias specification
#
# Cmnd alias specification
#
# User privilege specification
root    ALL=(ALL:ALL) ALL
[Read 27 Lines]
Help  Write Out  Where Is  Cut  Execute  Location
Exit  Read File  Replace  Paste  Justify  Go To Line
```

now we are going to use the usermod this is a command that modifies the system configuration for a specific user

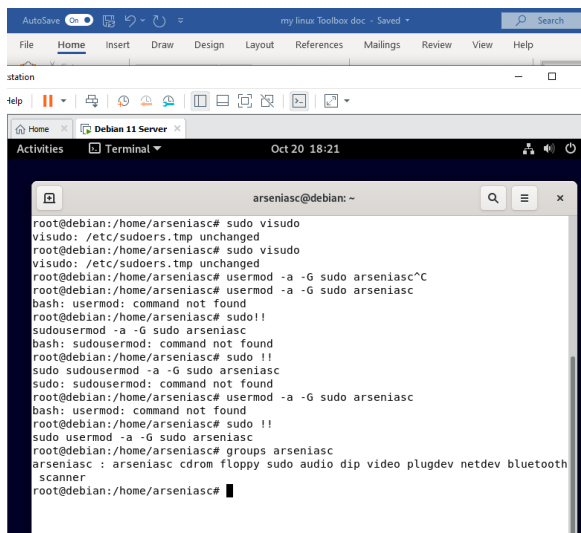
The **-a** is a shortcut for --append: It means append the group to the list of groups the user belongs to!

And the **-G** is a shortcut for --groups

So will **type usermod -a -G sudo** and press enter

You are going to find this error when you press enter bash: usermod: command not found, how to solve it?

type **sudo !!** and then you will be added.



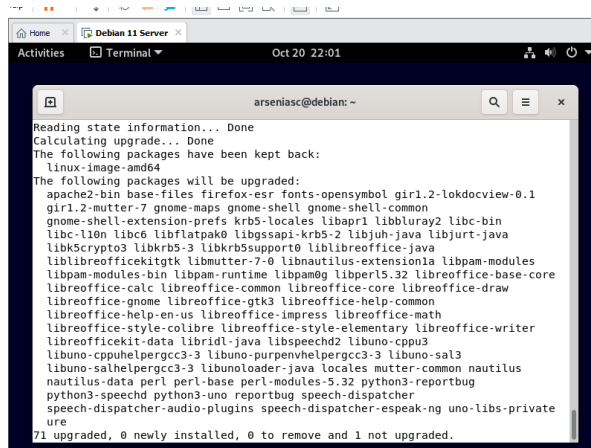
```
root@debian:/home/arseniasc# sudo visudo
Visudo: /etc/sudoers.tmp unchanged
root@debian:/home/arseniasc# sudo visudo
Visudo: /etc/sudoers.tmp unchanged
root@debian:/home/arseniasc# usermod -a -G sudo arseniasc^C
root@debian:/home/arseniasc# usermod -a -G sudo arseniasc
bash: usermod: command not found
root@debian:/home/arseniasc# sudo !!
sudousermod -a -G sudo arseniasc
bash: sudousermod: command not found
root@debian:/home/arseniasc# sudo !!
sudo sudousermod -a -G sudo arseniasc
sudo: sudousermod: command not found
root@debian:/home/arseniasc# usermod -a -G sudo arseniasc
bash: usermod: command not found
root@debian:/home/arseniasc# sudo !!
sudo usermod -a -G sudo arseniasc
root@debian:/home/arseniasc# groups arseniasc
arseniasc : arseniasc cdrom floppy sudo audio dip video plugdev netdev bluetooth
scanner
root@debian:/home/arseniasc#
```

Exit the root user by typing exit, later reboot your server.

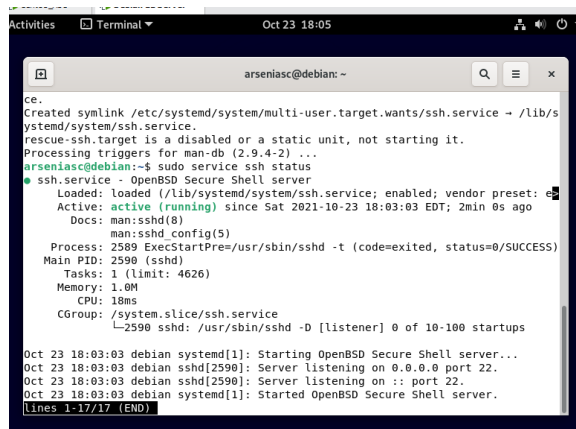
Later run the command **sudo apt-get upgrade** to update the applications.

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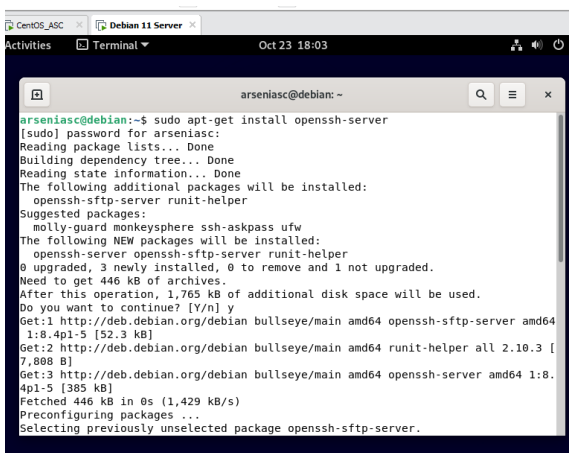
```
arseniasc@debian: ~  
Reading state information... Done  
Calculating upgrade... Done  
The following packages have been kept back:  
  linux-image-amd64  
The following packages will be upgraded:  
  apache2-bin base-files firefox-esr fonts-opensymbol gir1.2-lokdocview-0.1  
  gir1.2-mutter-7 gnome-maps gnome-shell gnome-shell-common  
  gnome-shell-extension-prefs krb5-locales libapr1 libbluray2 libc-bin  
  libc-l10n libc6 libflatpak0 libgssapi-krb5-2 libjsh-java libjurt-java  
  libk5crypto3 libkrb5-3 libkrb5-support0 liblibreoffice-java  
  liblibreofficekitgtk libmutter-7-0 libnautilus-extension1a libpam-modules  
  libpam-modules-bin libpam-runtime libpam0g libperl5.32 libreoffice-base-core  
  libreoffice-calc libreoffice-common libreoffice-core libreoffice-draw  
  libreoffice-gnome libreoffice-gtk3 libreoffice-help-common  
  libreoffice-help-en-us libreoffice-impress libreoffice-math  
  libreoffice-style-colibre libreoffice-style-elementary libreoffice-writer  
  libreofficekit-data libridl-java libspeech2 libuno-cppu3  
  libuno-cppuhelpergcc3-3 libuno-purpnhelpergcc3-3 libuno-sal3  
  libuno-salhelpergcc3-3 libunoloader-java locales mutter-common nautilus  
  nautilus-data perl perl-base perl-modules-5.32 python3-reportbug  
  python3-speechd python3-uno reportbug speech-dispatcher  
  speech-dispatcher-audio-plugins speech-dispatcher-espeak-ng uno-libs-private  
  ure  
71 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
```



```
arseniasc@debian: ~  
Created symlink /etc/systemd/system/multi-user.target.wants/ssh.service → /lib/s  
systemd/system/ssh.service.  
rescue-ssh.target is a disabled or a static unit, not starting it.  
Processing triggers for man-db (2.9.4-2) ...  
arseniasc@debian:~$ sudo service ssh status  
● ssh.service - OpenBSD Secure Shell server  
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: en  
   Active: active (running) since Sat 2021-10-23 18:03:03 EDT; 2min 0s ago  
     Docs: man:sshd(8)  
           man:sshd_config(5)  
   Process: 2589 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)  
    Main PID: 2590 (sshd)  
       Tasks: 1 (limit: 4626)  
      Memory: 1.0M  
         CPU: 18ms  
        CGroup: /system.slice/ssh.service  
                └─2590 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups  
  
Oct 23 18:03:03 debian systemd[1]: Starting OpenBSD Secure Shell server...  
Oct 23 18:03:03 debian sshd[2590]: Server listening on 0.0.0.0 port 22.  
Oct 23 18:03:03 debian sshd[2590]: Server listening on :: port 22.  
Oct 23 18:03:03 debian systemd[1]: Started OpenBSD Secure Shell server.  
[lines 1-17/17 (END)]
```

Ssh server

Type `sudo apt-get install openssl-server`



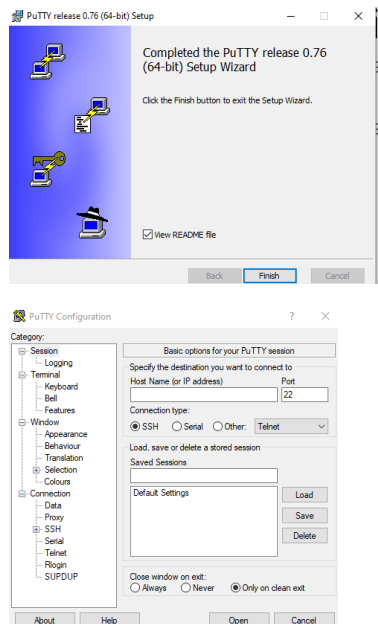
```
arseniasc@debian:~$ sudo apt-get install openssl-server  
[sudo] password for arseniasc:  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  openssl-sftp-server runit-helper  
Suggested packages:  
  molly-guard monkeysphere ssh-askpass ufw  
The following NEW packages will be installed:  
  openssl-server openssl-sftp-server runit-helper  
0 upgraded, 3 newly installed, 0 to remove and 1 not upgraded.  
Need to get 446 kB of archives.  
After this operation, 1,765 kB of additional disk space will be used.  
Do you want to continue? [Y/n] y  
Get:1 http://deb.debian.org/debian bullseye/main amd64 openssl-sftp-server amd64  
  1:0.4p1-5 [52.3 kB]  
Get:2 http://deb.debian.org/debian bullseye/main amd64 runit-helper all 2.10.3 [7,808 B]  
Get:3 http://deb.debian.org/debian bullseye/main amd64 openssl-server amd64 1:0.4p1-5 [385 kB]  
Fetched 446 kB in 0s (1,429 kB/s)  
Preconfiguring packages ...  
Selecting previously unselected package openssl-sftp-server.
```

How are we going to share our file?

I am running windows in my local host that is why I am going to use putty if your running Linux
`in your local host you can use SSP with the command line.

Go to your web browser and type putty and get the installer of Putty or you can click to this link below and go directly to the web page and download it.

<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>



After you been installed putty, now you can transfer your files.

These are my current directory files and directories. Now, we are going to send the file datebook from my windows localhost to the Linux machine.



First, we go on cmd the command line on windows. On the command line we go to the directory where the file is located, then type **pscp the the file_name the**

Destination_username@Destination_hostname:the path of the directory we are going to paste it.

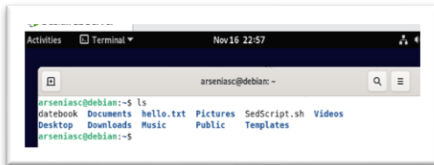
Then hit enter, and it should be successful if you type all the information correctly, be aware when you are typing the user and the Ip address or the hostname.

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```
Command Prompt
C:\Users\grabl\Desktop\Linux Administration>pscp datebook arseniasc@debian:/home/arseniasc
arseniasc@debian's password:
datebook           | 2 KB | 2.1 KB/s | ETA: 00:00:00 | 100%
C:\Users\grabl\Desktop\Linux Administration>
```

Now, we can see we have our datebook file in our machine.

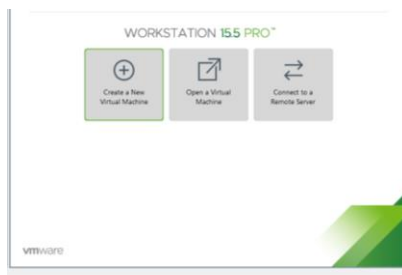


CentOS Set up

- Get the distro. You can get it through the link below.

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

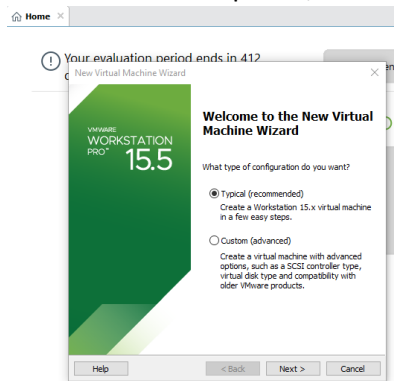
After download, the iso, go to VMware Workstation and starts by clicking on create a new virtual machine.



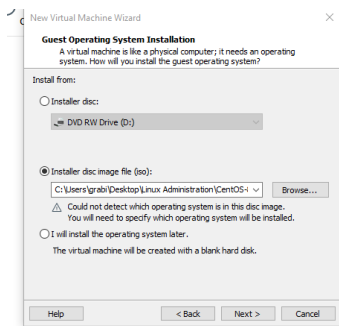
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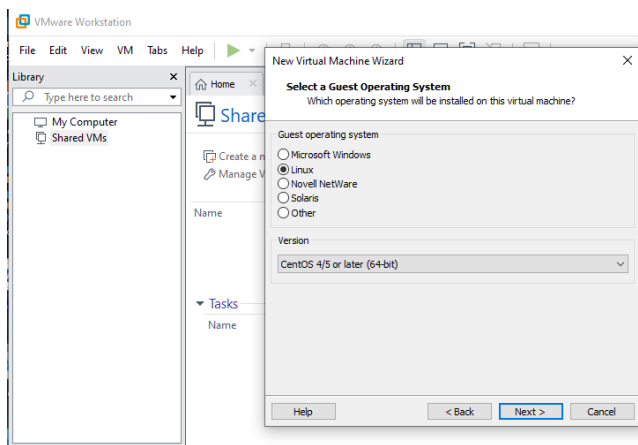
Pick one of these options, I will recommend The typical, Though it is going to depend on your needs.



Select where is located your iso, the server image. I have my iso in the Desktop folder.



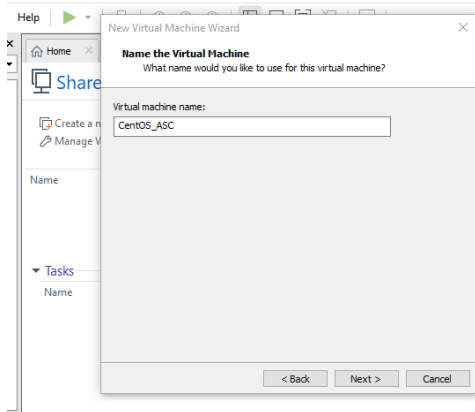
Select the operative system name and version, in our case we pick the following, Linux – CentOS 8.4. x 64 bit. Select CentOS 4/5 or later (64bit)



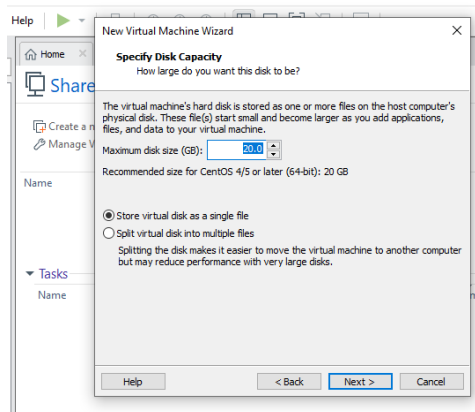
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Select the machine name,



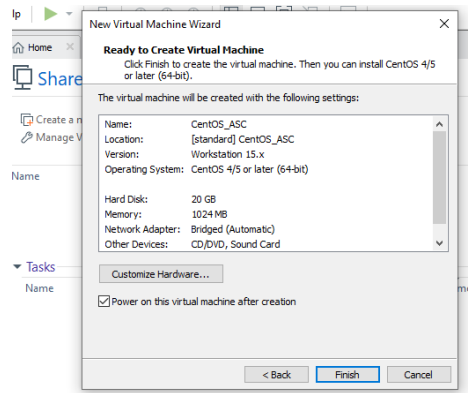
Select the disk capacity according to your needs.



The next screen shows you a summary of your system settings

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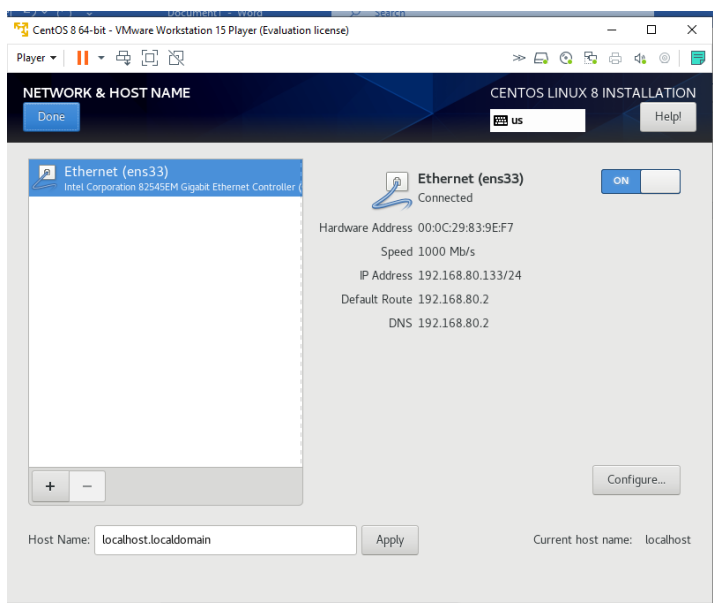
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Wait for the automatic boot seconds or just select CentOS Linux 8



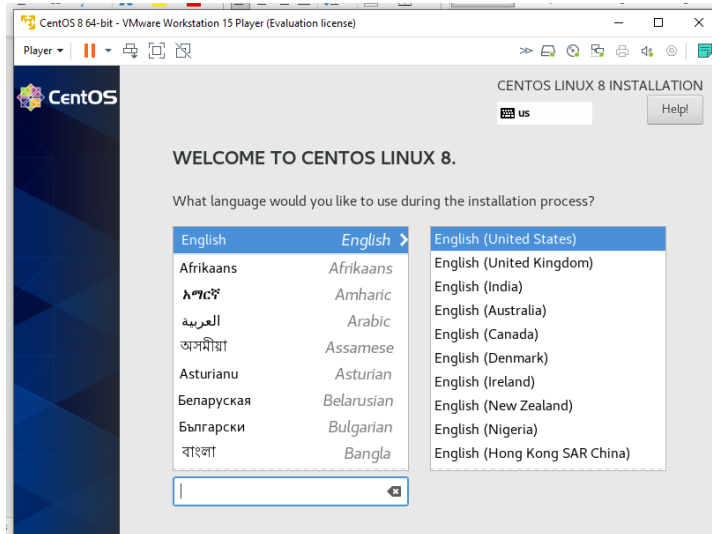
Select the host name



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Select the language you want.

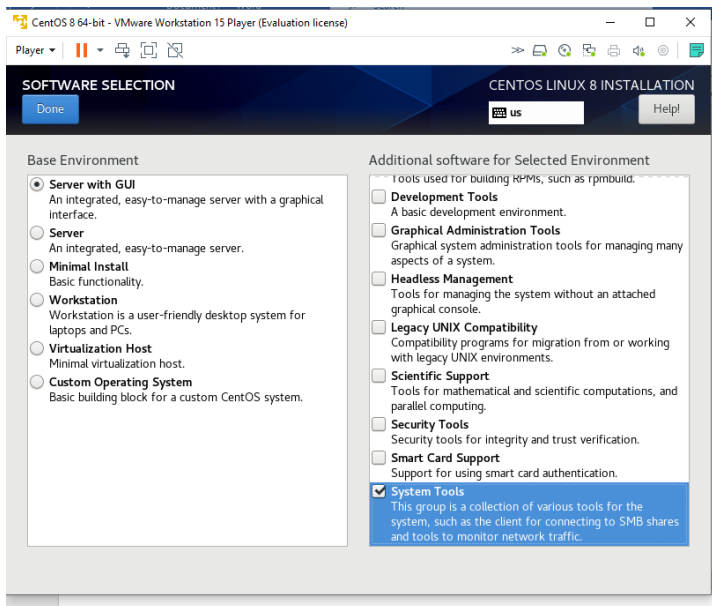


Settings:

Select a root password. For your security be sure you will remember that password.

More settings

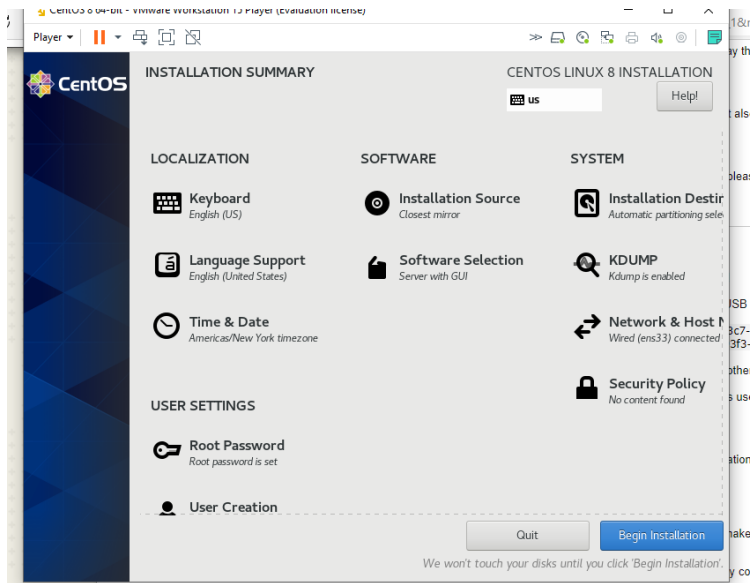
Select the base environment. Put a checkmark in Server with **GUI**. In the **additional Software for Selected** environment put a checkmark on System tools, then click continue.



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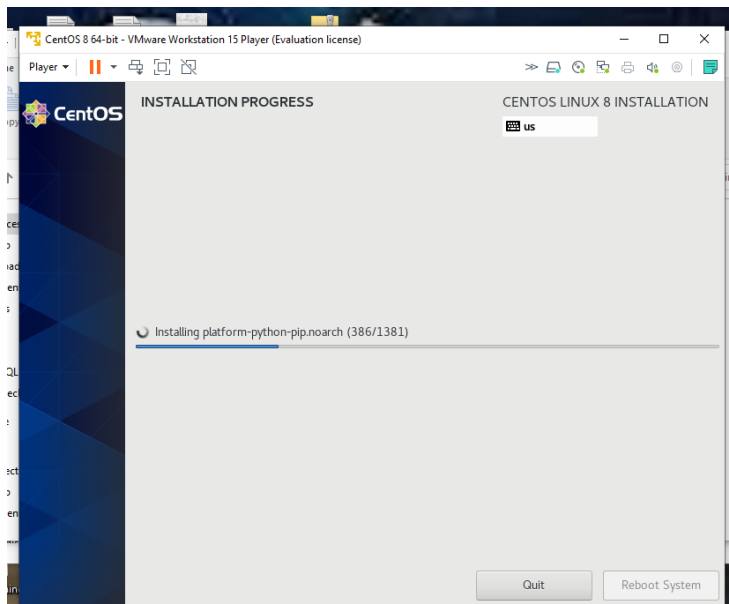
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In the image below there is a summary of the Centos complete settings. After you check everything please click in Begin installation.



Installation:

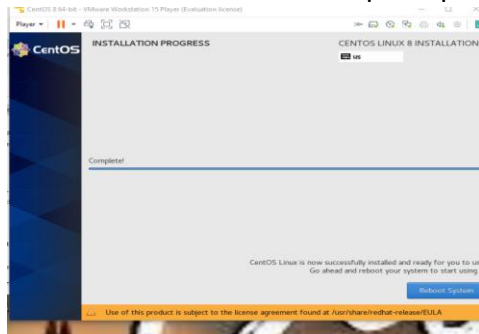
Wait until installation is complete



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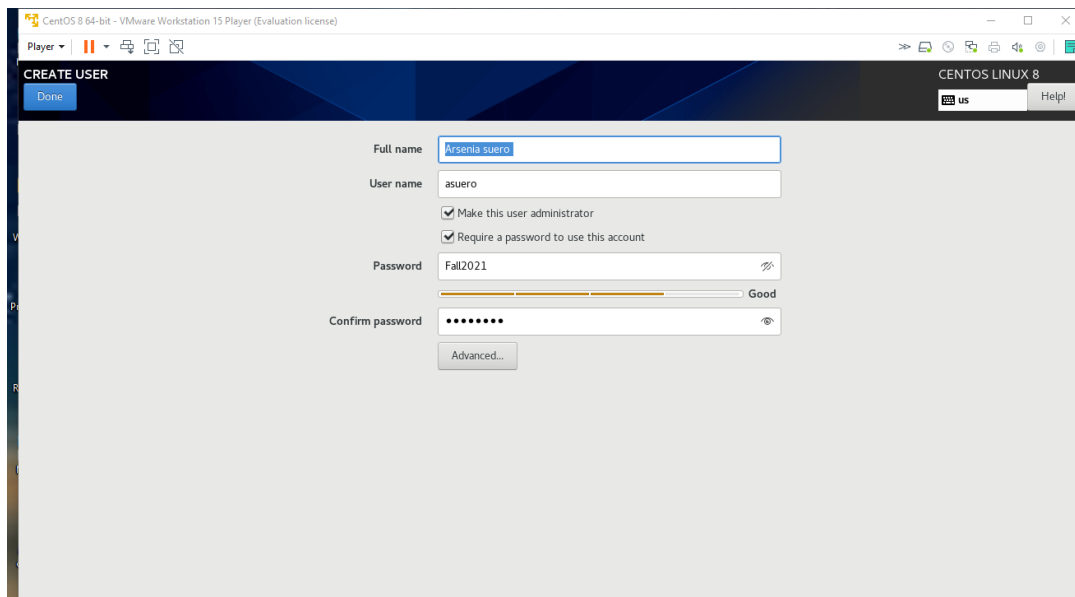
After the installation is complete please click on the blue button to reboot the system



User Creation

Create a user name and password. please select the user **full name** and the the new user **user name** we want to **make this user the administrator**, please put a checkmark in this option, and of course **we want require a password for this user**.

Please, use a secure password for your admin user.

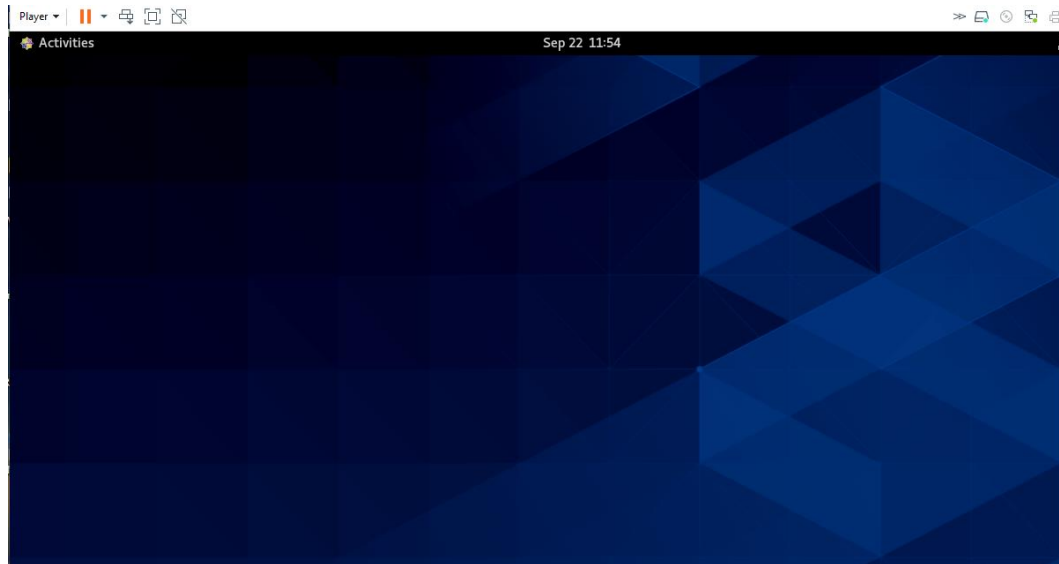


After creating your user, please click Done, your system will automatically reboot, and you will be all set to start using your machine.

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CentOS home Screen



Some updates to the server.

CentOS use **yum** instead of **apt -get**.

You can use **visudo** to see your configuration file

```
File Edit View Search Terminal Help
## Next comes the main part: which users can run what software on
## which machines (the sudoers file can be shared between multiple
## systems).
## Syntax:
##
##    user    MACHINE=COMMANDS
##
## The COMMANDS section may have other options added to it.
##
## Allow root to run any commands anywhere
root    ALL=(ALL)    ALL

## Allows members of the 'sys' group to run networking, software,
## service management apps and more.
# %sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LOCATE, DR
IVERS

## Allows people in group wheel to run all commands
wheel   ALL=(ALL)    ALL

## Some thing without a password
# %wheel    ALL=(ALL)    NOPASSWD: ALL

## Allows members of the users group to mount and unmount the
## cdrom as root
# %users    ALL=/sbin/mount /mnt/cdrom, /sbin/umount /mnt/cdrom
```

Please look in this configuration. When you check all the information on your file to exit this configuration mode, please type the following to exit the configuration: **qa!**

Type **usermod -aG wheel username** to add your user to the wheel group. After that you will have root privileges.

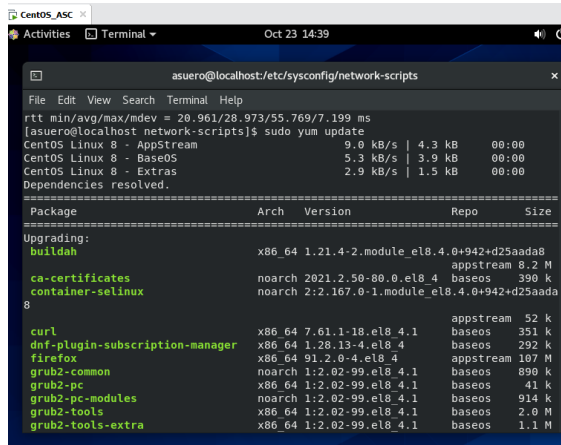
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Yum Update.

Yum is like an app installer, yum is used in some Linux distros such as CentOS and fedora.

Type this command in the terminal: **sudo yum update**



```
CentOS_ASC x
Activities Terminal Oct 23 14:39
asuario@localhost:etc/sysconfig/network-scripts
File Edit View Search Terminal Help
rtt: min/avg/max/mdev = 20.961/28.973/55.769/7.199 ms
[asuario@localhost network-scripts]$ sudo yum update
CentOS Linux 8 - AppStream 9.0 kB/s | 4.3 kB 00:00
CentOS Linux 8 - BaseOS 5.3 kB/s | 3.9 kB 00:00
CentOS Linux 8 - Extras 2.9 kB/s | 1.5 kB 00:00
Dependencies resolved.
=====
Package Arch Version Repo Size
=====
Upgrading:
buildah x86_64 1.21.4-2.module_el8.4.0+942+d25aada8 appstream 8.2 M
ca-certificates noarch 2021.2.50-0.el8_4 baseos 390 k
container-selinux noarch 2:2.167.0-1.module_el8.4.0+942+d25aada8 8
curl x86_64 7.61.1-18.el8_4.1 appstream 52 k
dnf-plugin-subscription-manager x86_64 1.28.13-4.el8_4 baseos 292 k
firefox x86_64 91.2.0-4.el8_4 appstream 107 M
grub2-common noarch 1:2.02-99.el8_4.1 baseos 890 k
grub2-pc x86_64 1:2.02-99.el8_4.1 baseos 41 k
grub2-pc-modules noarch 1:2.02-99.el8_4.1 baseos 914 k
grub2-tools x86_64 1:2.02-99.el8_4.1 baseos 2.0 M
grub2-tools-extra x86_64 1:2.02-99.el8_4.1 baseos 1.1 M
```

Later, to get the latest version of each application, you need to update all packages list in the repository by running the below command:

\$ sudo dnf update

How are we going to share our file?

I am running windows in my local host that is why I am going to use putty if your running Linux
in your local host you can use SSP with the command line.

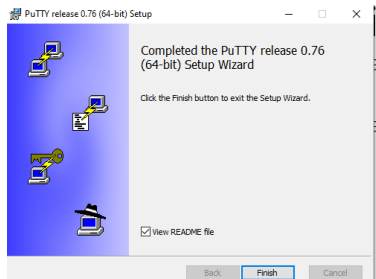
Go to your web browser and type putty and get the installer of Putty or you can click to this link below and go directly to the web page and download it.

<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

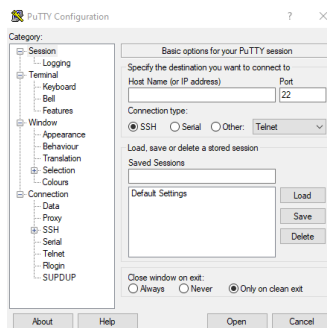
putty installation

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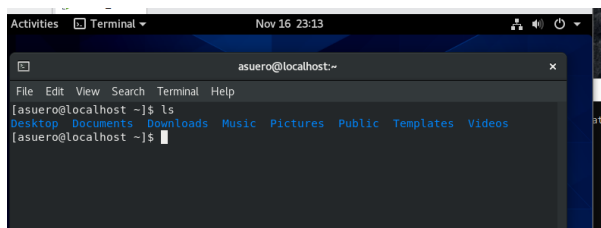


Putty main screen

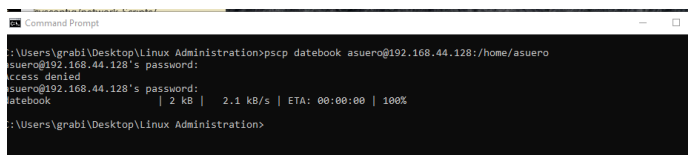


After you been installed putty, now you can transfer your files.

These are my current directory files and directories. Now, we are going to send the file datebook from my windows localhost to the Linux machine.



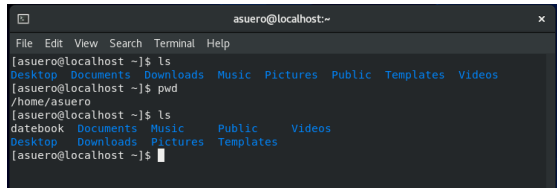
First, we go on cmd the command line on windows. On the command line we go to the directory where the file is located, then type **pscp the the file_name the Destination_username@Destination_hostname:the path of the directory we are going to paste it.** Then hit enter, and it should be successful if you type all the information correctly, be aware when you are typing the user and the Ip address or the hostname.



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Now, we can see we have our datebook file in our machine.



```
asuario@localhost:~  
File Edit View Search Terminal Help  
[asuario@localhost ~]$ ls  
Desktop Documents Downloads Music Pictures Public Templates Videos  
[asuario@localhost ~]$ pwd  
/home/asuario  
[asuario@localhost ~]$ ls  
datebook Documents Music Public Videos  
Desktop Downloads Pictures Templates  
[asuario@localhost ~]$
```