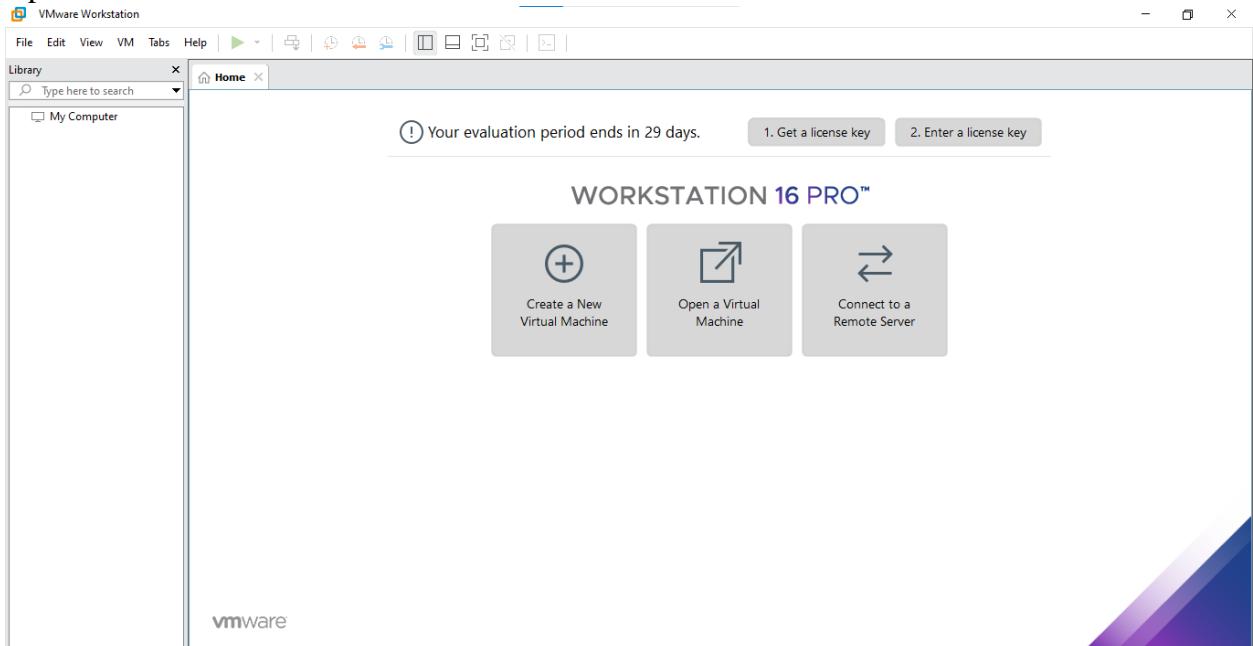


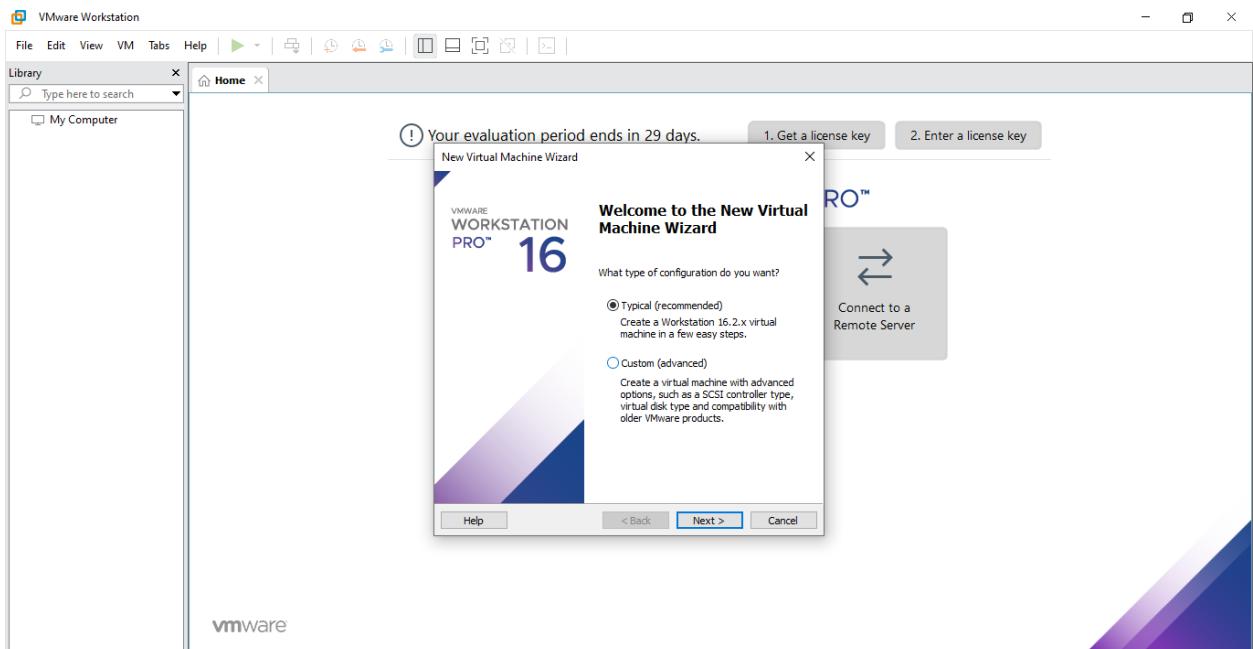
Practical 1

Steps:

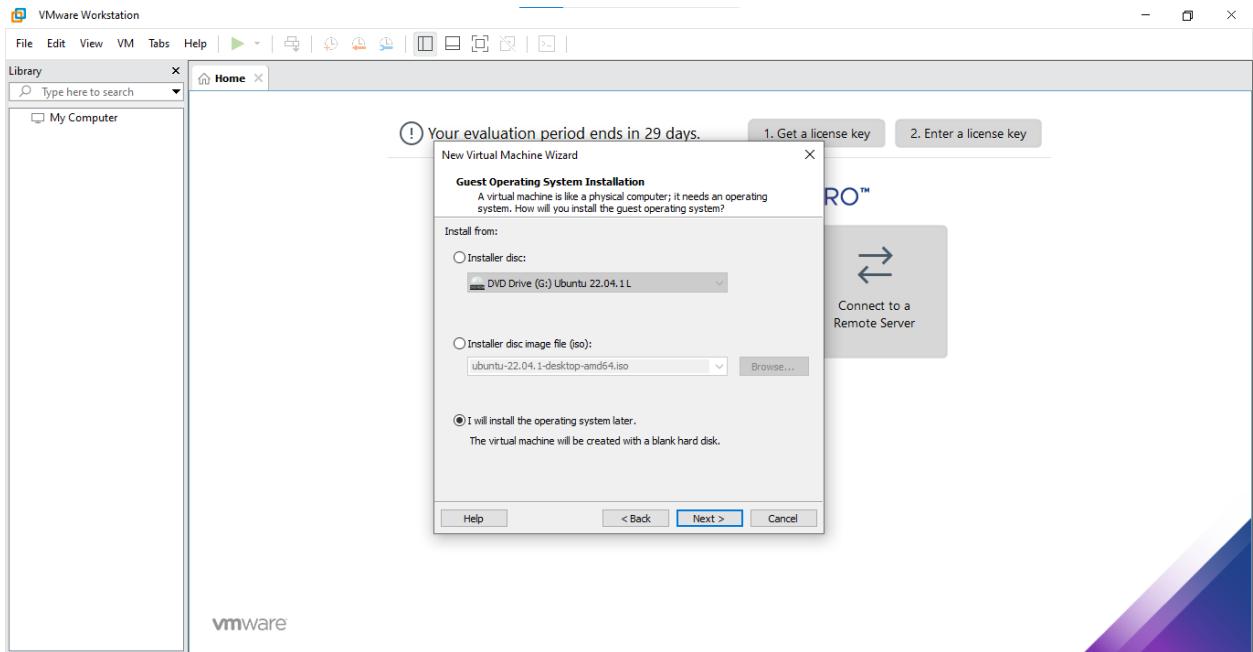
1. Open VM Ware Workstation.



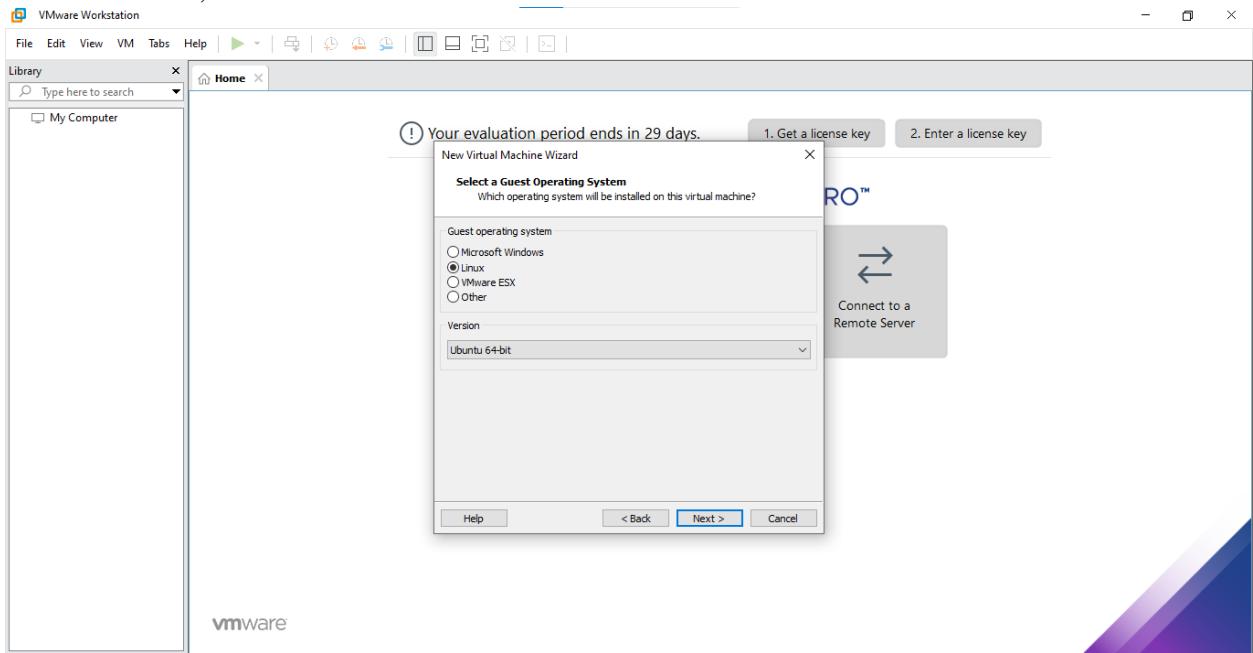
2. Create a new virtual machine and click next.



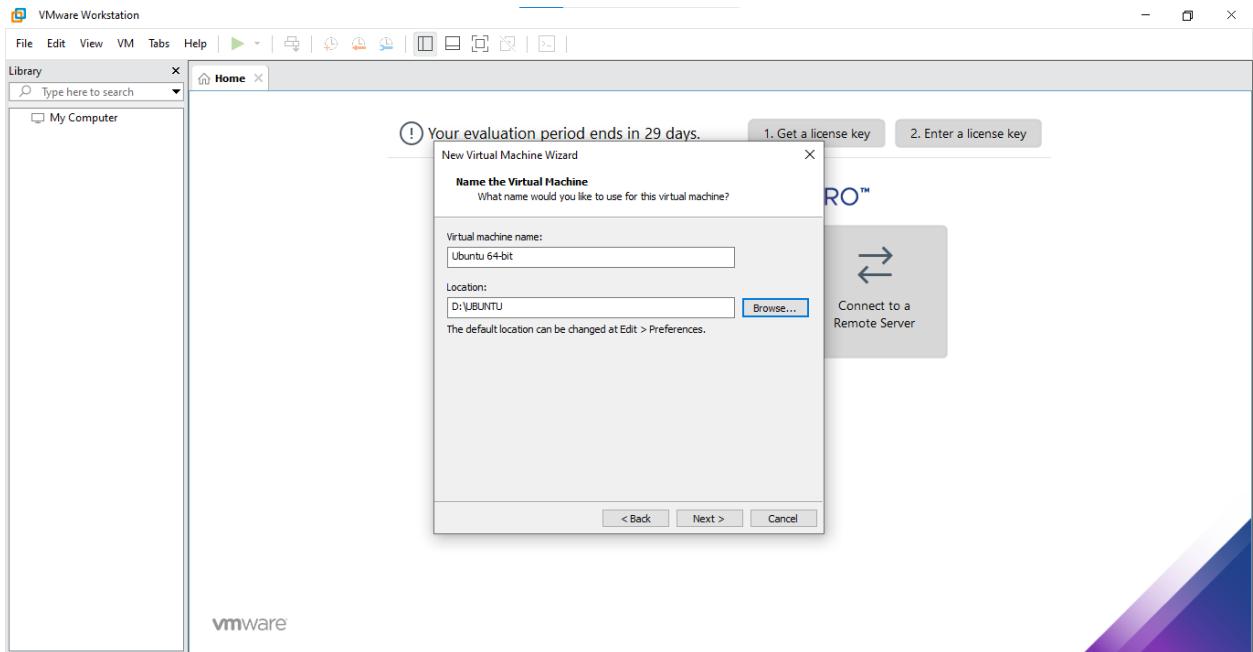
3. Click 3rd Option and next.



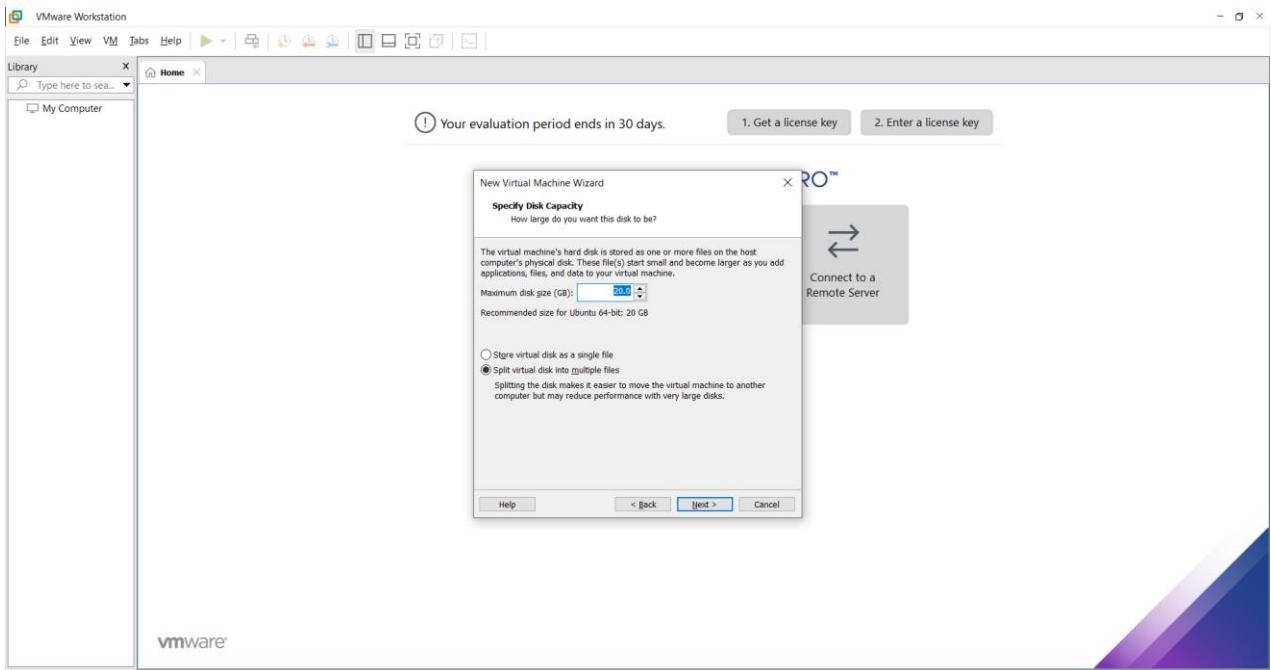
4. Click on Linux, select Ubuntu 64-bit and next.



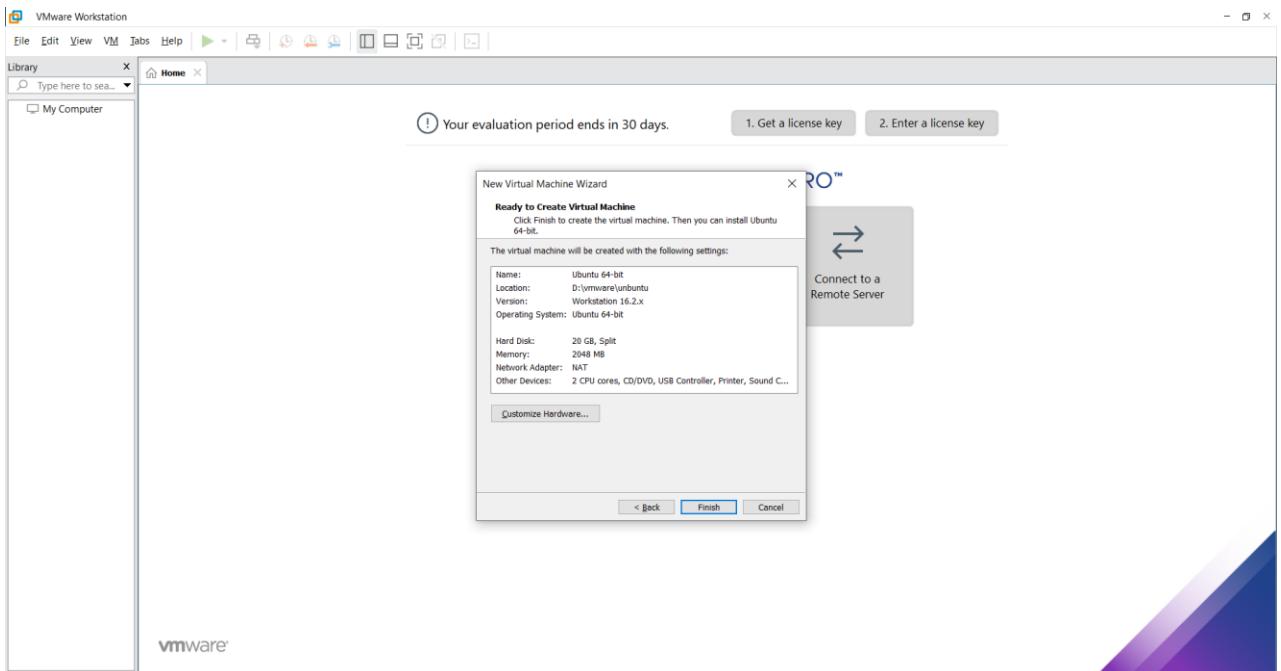
5. Name your virtual machine and create a new folder for it and next.



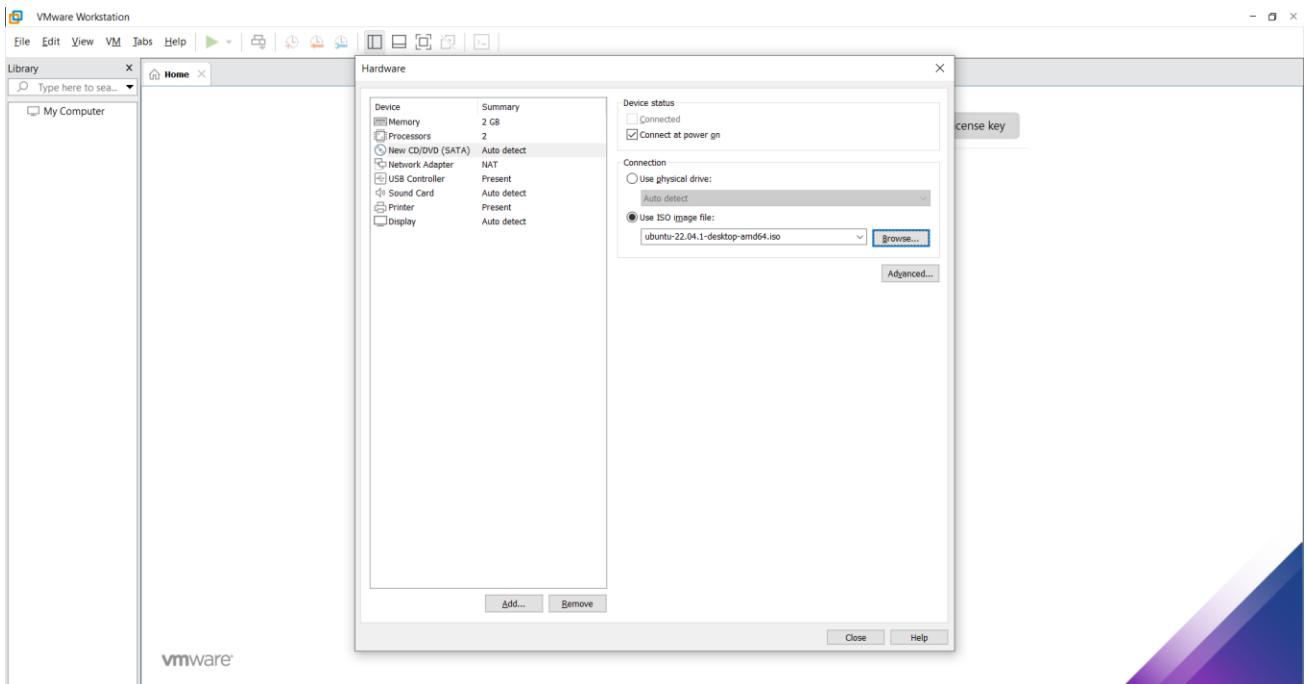
6. Disk Size 20GB and select split option



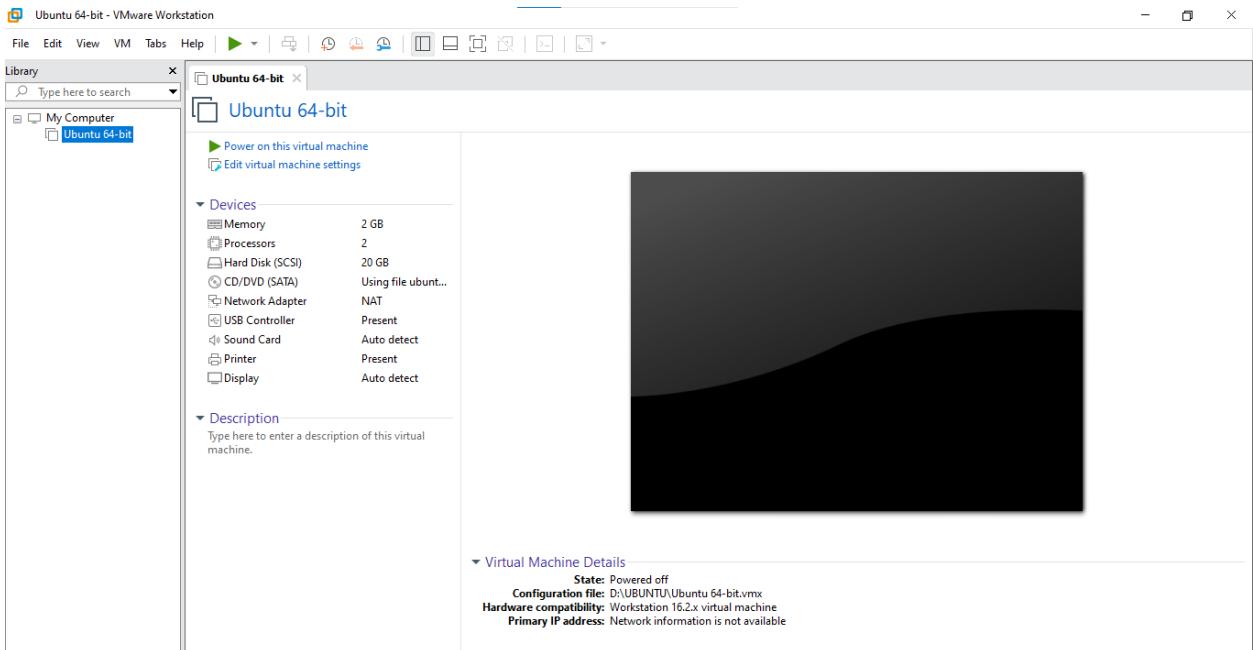
7. Click on customize.



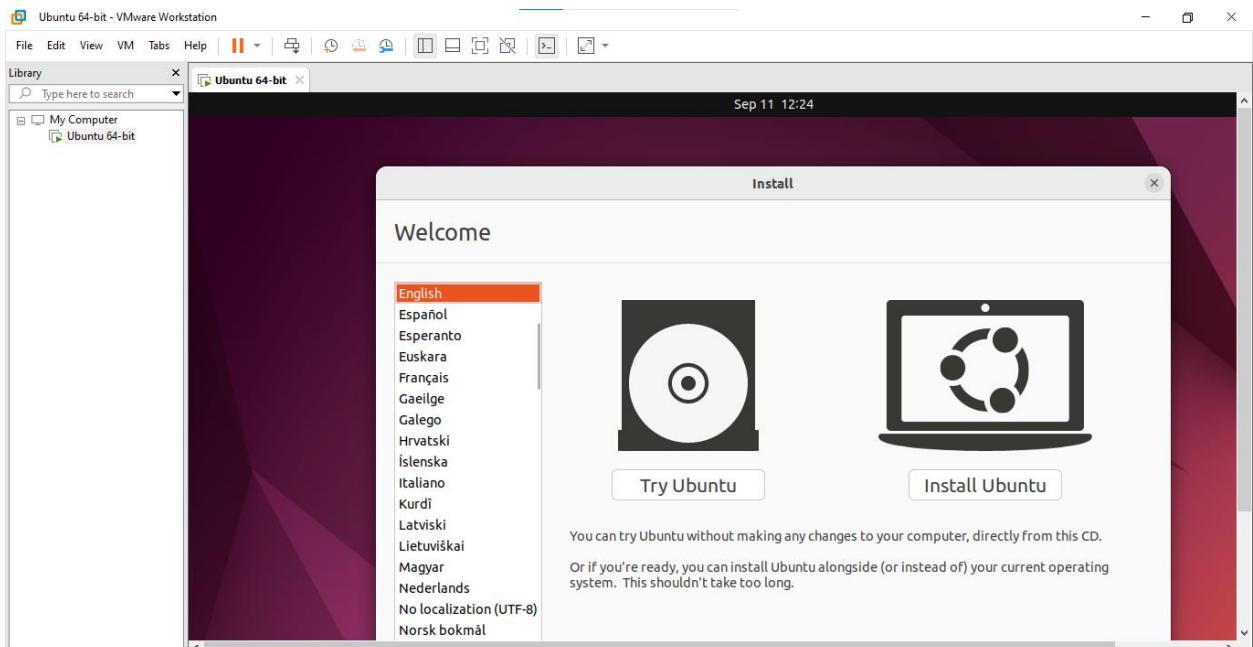
8. Click on New CD/DVD and click on Use ISO image file and select 22LTS Ubuntu iso file and close.



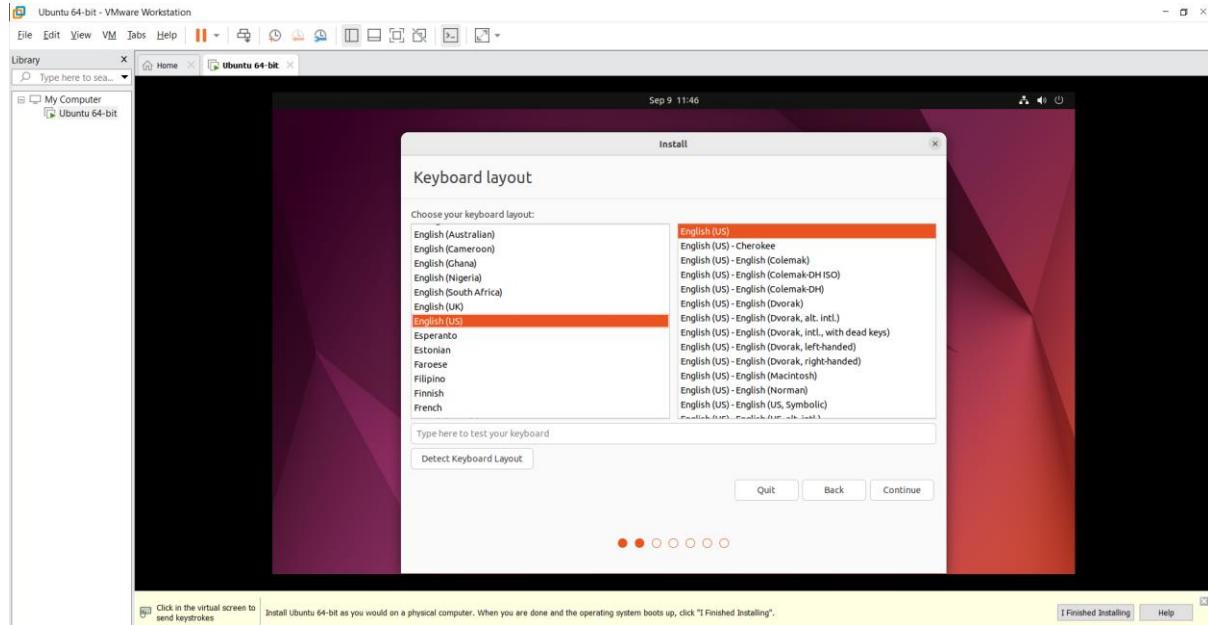
9. After Customization click on finish and this screen will appear click on Power on this vm.



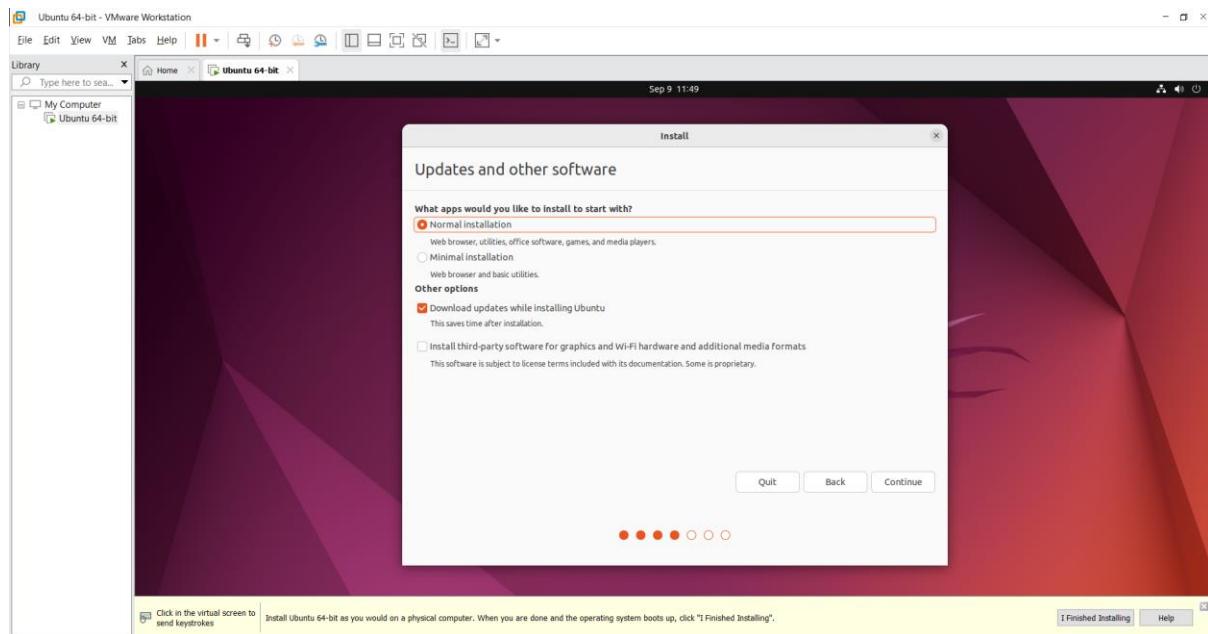
10. Install Ubuntu.



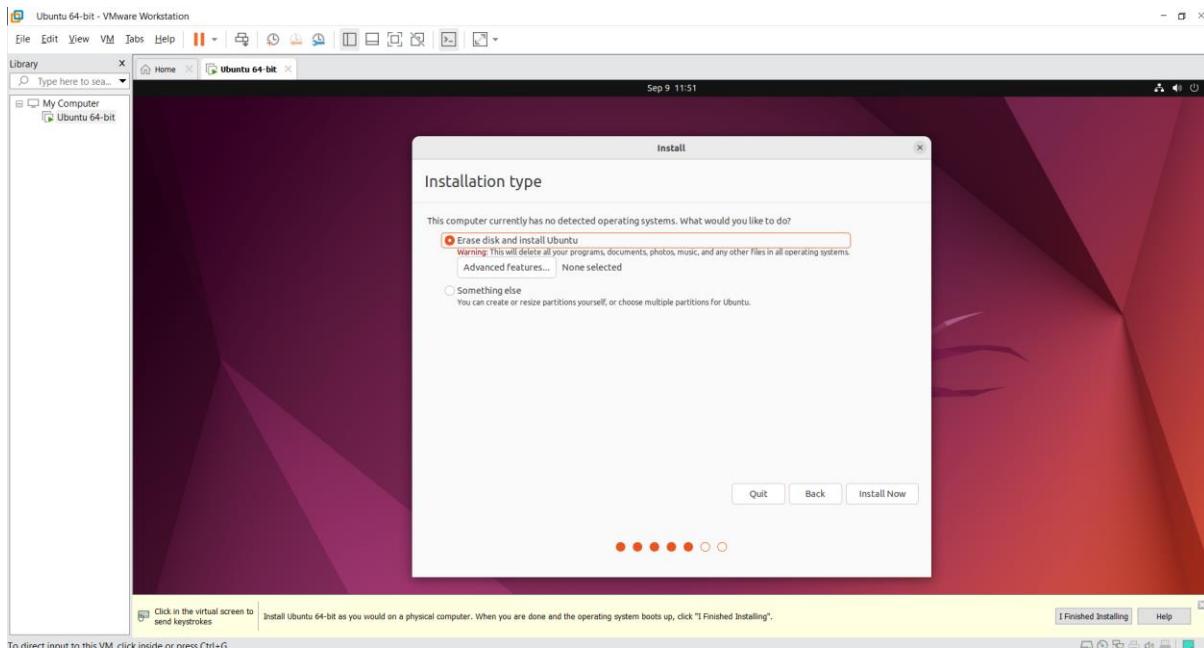
11. Select Language.



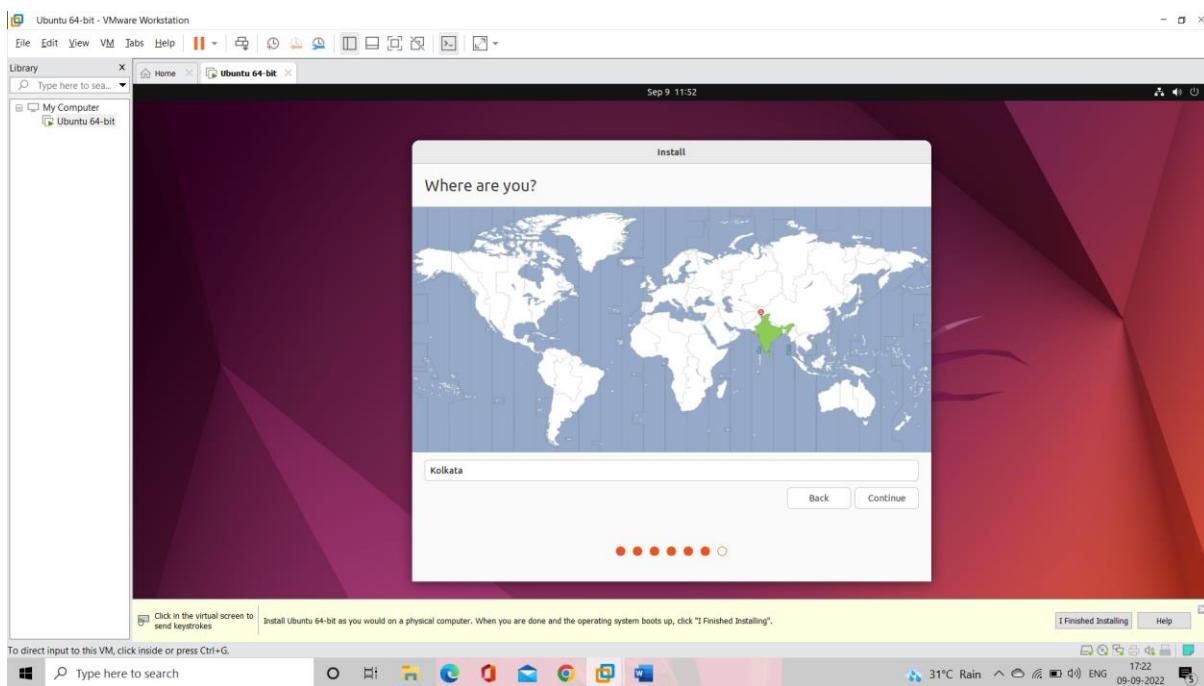
12. Click Normal Installation and Download Updates.



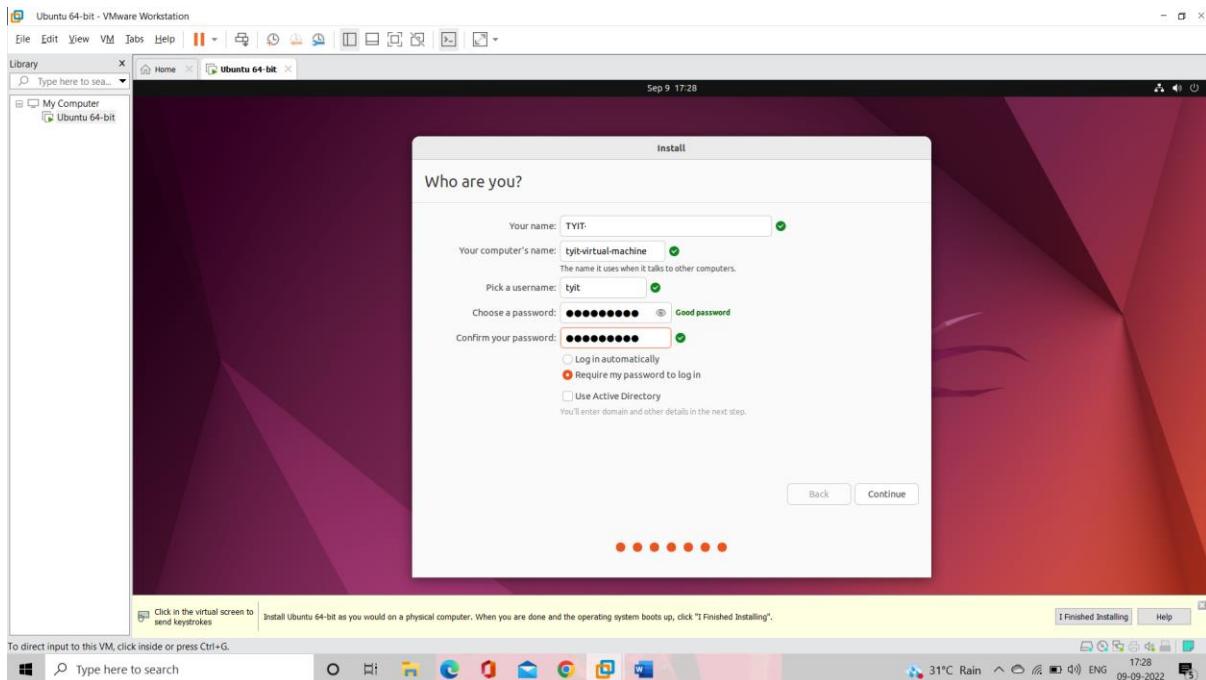
13. Erase Disk.



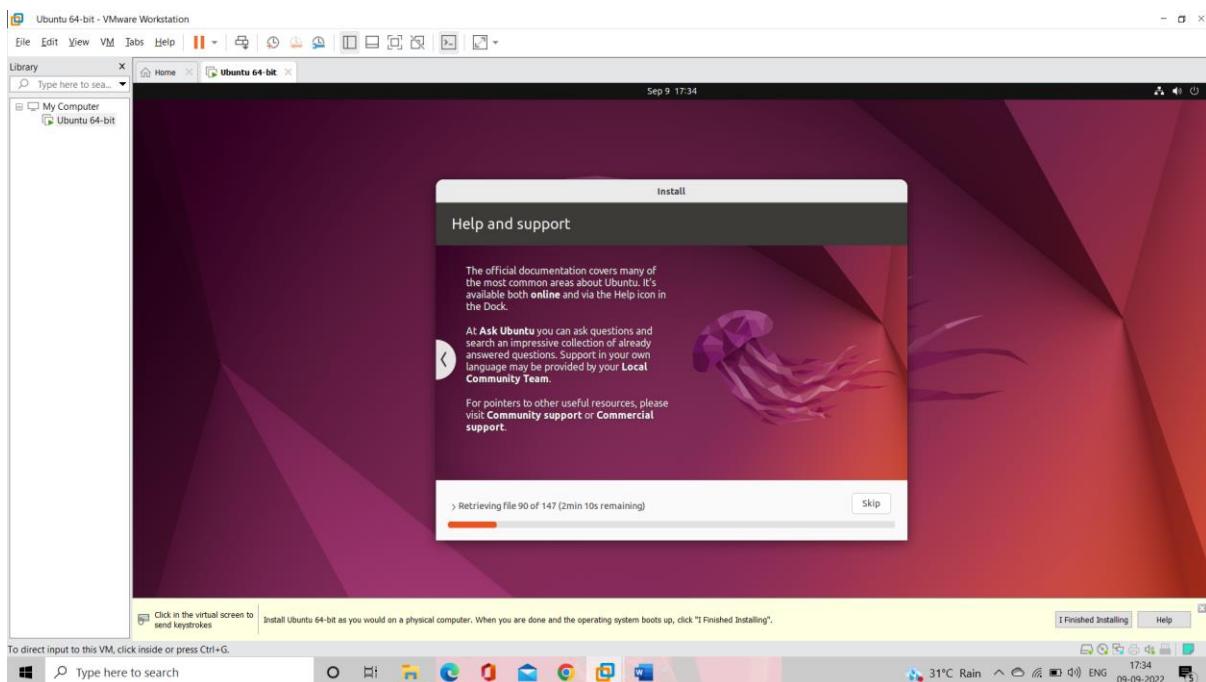
14. Select Timezone.



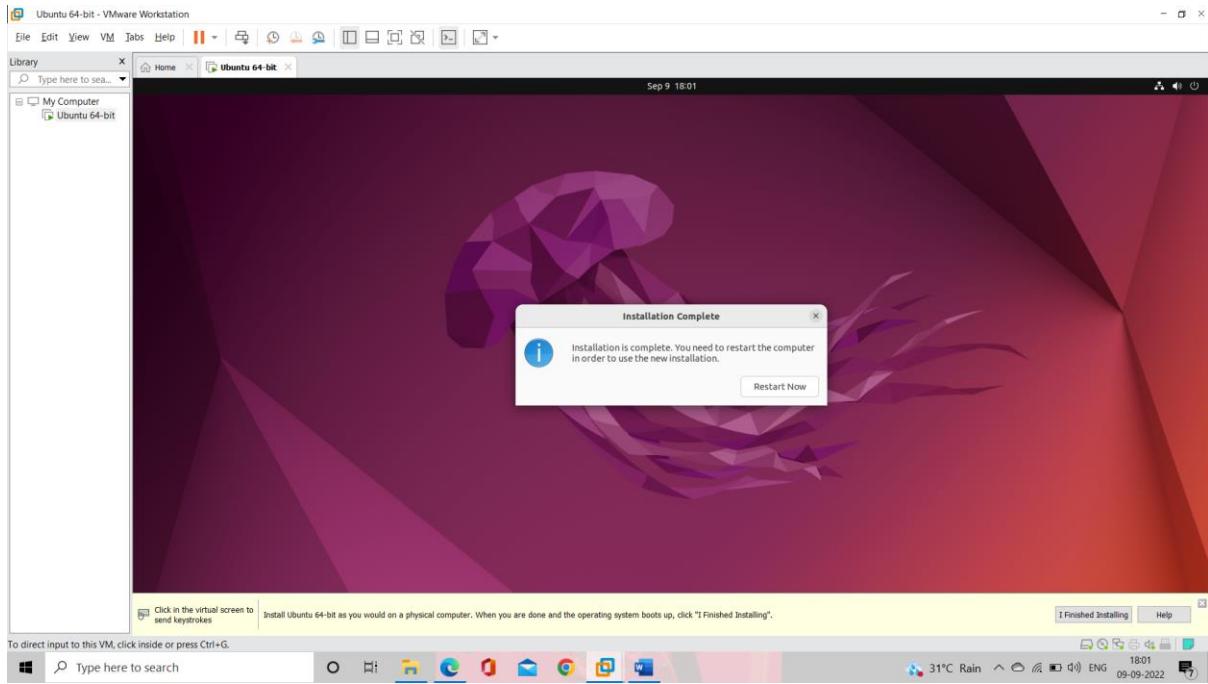
15. Set the details.



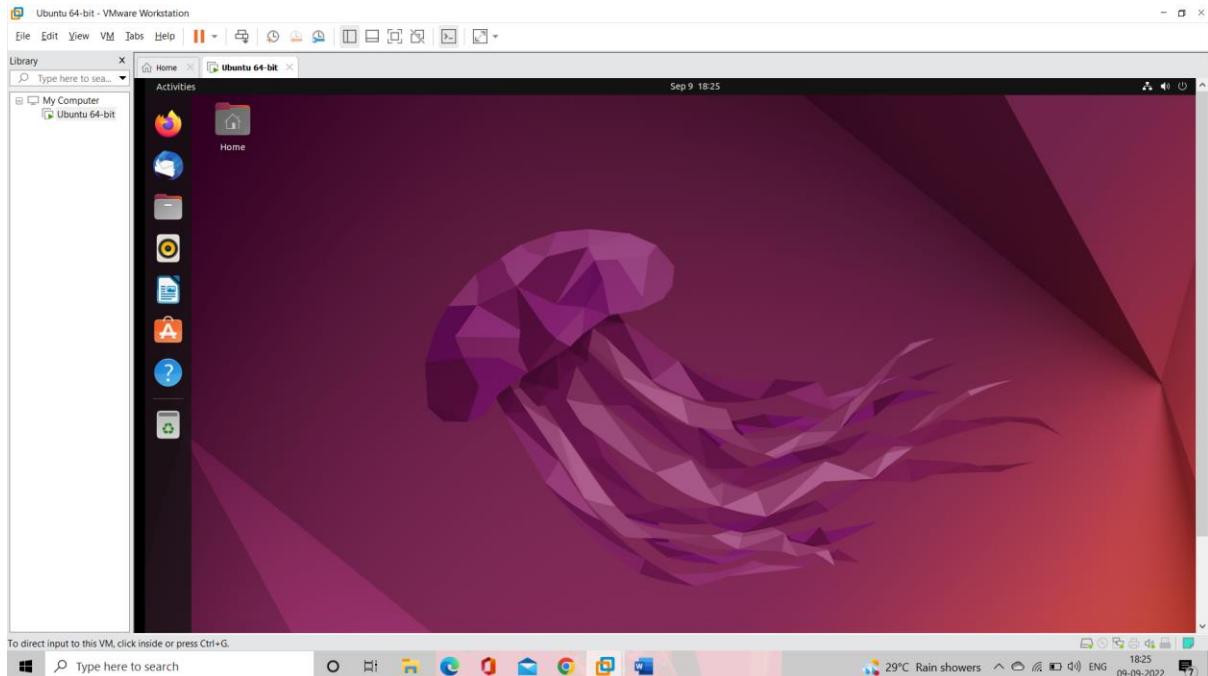
16. Wait for it to install.



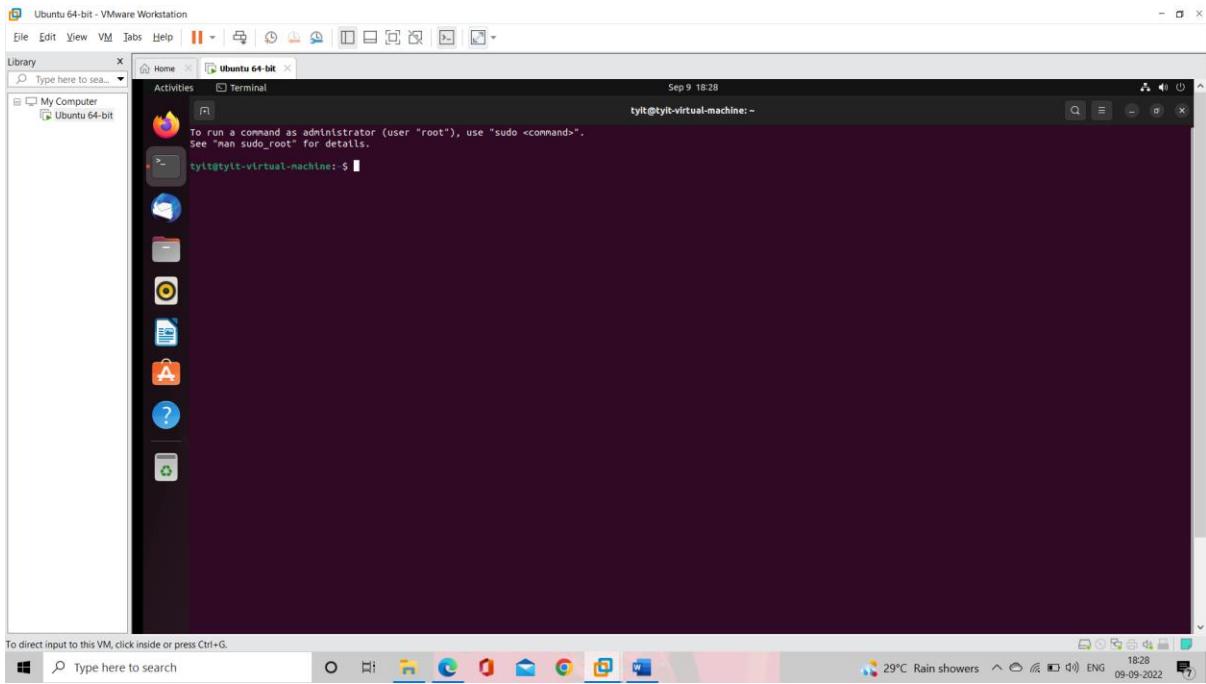
17. Restart.



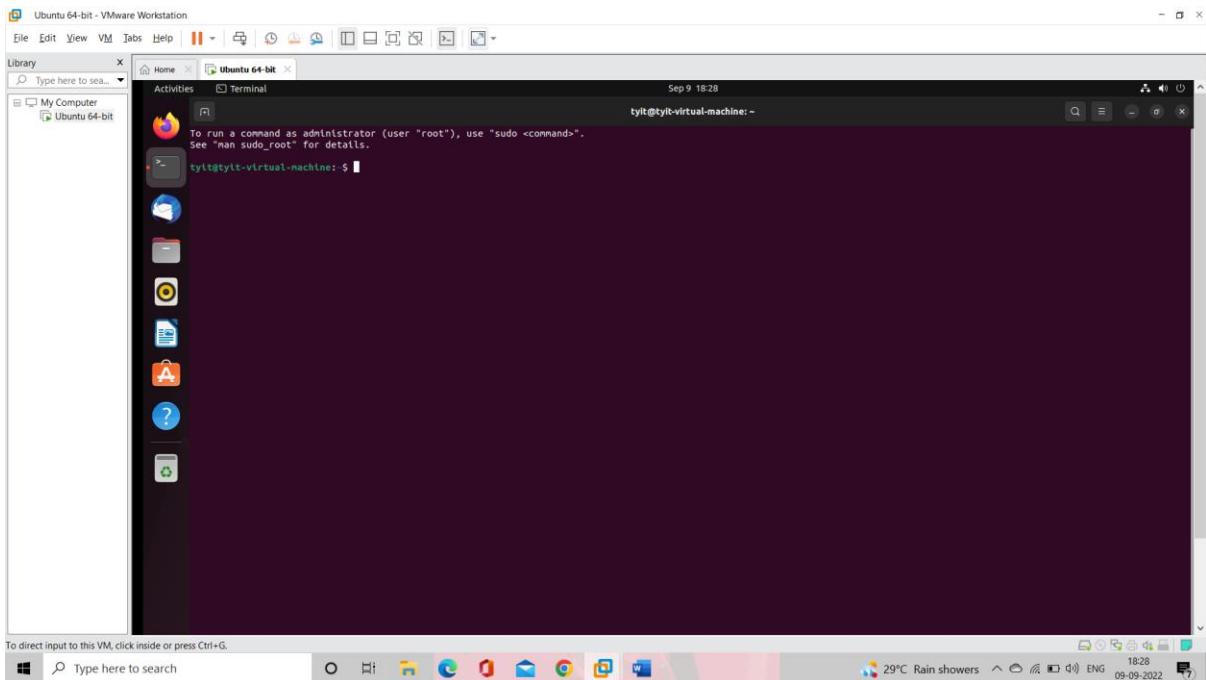
18. Your screen will appear like this.



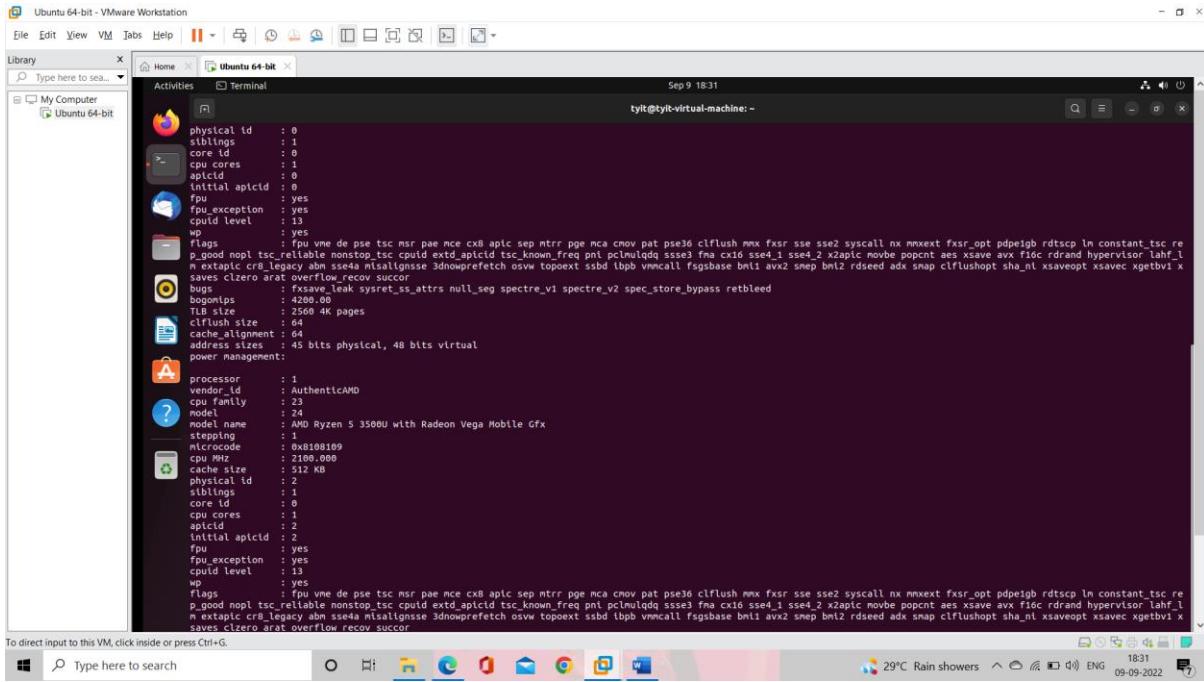
19. Open Terminal.



20. sudo apt update

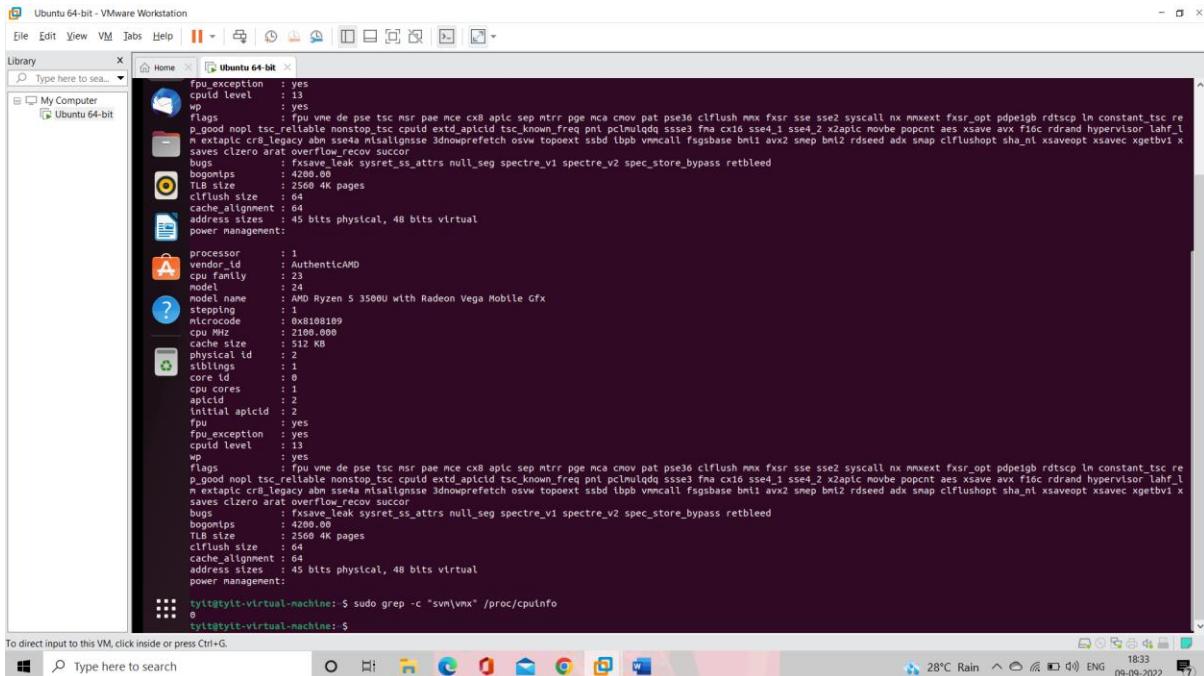


21. Cat /proc/cpuinfo



```
physical id : 0
siblings : 1
core id : 0
cpu cores : 1
apicid : 0
initial apicid : 0
fpu : yes
fpu_exception : yes
cpu_exception : yes
cpuid level : 13
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep ntrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm constant_tsc re
p_good nopl tsc_reliable nonstop_tsc cpuid extd_apicid tsc_known_freq pni pclmulqdq ssse3 fma cx16 sse4_1 sse4_2 x2apic moveb popcnt aes xsave avx f16c rdrand hypervisor lahf_ll
m extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw topoext ssbd lpbp vmmcall fsbsbase bm1l avx2 smp bm12 rdseed adx snap clflushopt sha_ni xsaveopt xsavenc xgetbv1 x
saves clzero arat overflow recov succor
bugs : fxsave_leak sysret_ss_attrs null_seg spectre_v1 spectre_v2 spec_store_bypass rebbleed
bogomips : 4200.00
tlb_size : 2560 4K pages
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:
processor : 1
vendor_id : AuthenticAMD
cpu family : 23
model : 24
model name : AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx
stepping : 1
microcode : 0x8108109
cpu MHz : 2100.000
cache size : 512 KB
physical id : 2
siblings : 1
core id : 0
cpu cores : 1
apicid : 2
initial apicid : 2
fpu : yes
fpu_exception : yes
cpuid level : 13
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep ntrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm constant_tsc re
p_good nopl tsc_reliable nonstop_tsc cpuid extd_apicid tsc_known_freq pni pclmulqdq ssse3 fma cx16 sse4_1 sse4_2 x2apic moveb popcnt aes xsave avx f16c rdrand hypervisor lahf_ll
m extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw topoext ssbd lpbp vmmcall fsbsbase bm1l avx2 smp bm12 rdseed adx snap clflushopt sha_ni xsaveopt xsavenc xgetbv1 x
saves clzero arat overflow recov succor
bugs : fxsave_leak sysret_ss_attrs null_seg spectre_v1 spectre_v2 spec_store_bypass rebbleed
bogomips : 4200.00
tlb_size : 2560 4K pages
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:
```

22. sudo grep -c "svm\vmx" /proc/cpuinfo



```
fpu_exception : yes
cpuid level : 13
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep ntrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm constant_tsc re
p_good nopl tsc_reliable nonstop_tsc cpuid extd_apicid tsc_known_freq pni pclmulqdq ssse3 fma cx16 sse4_1 sse4_2 x2apic moveb popcnt aes xsave avx f16c rdrand hypervisor lahf_ll
m extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw topoext ssbd lpbp vmmcall fsbsbase bm1l avx2 smp bm12 rdseed adx snap clflushopt sha_ni xsaveopt xsavenc xgetbv1 x
saves clzero arat overflow recov succor
bugs : fxsave_leak sysret_ss_attrs null_seg spectre_v1 spectre_v2 spec_store_bypass rebbleed
bogomips : 4200.00
tlb_size : 2560 4K pages
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:
processor : 1
vendor_id : AuthenticAMD
cpu family : 23
model : 24
model name : AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx
stepping : 1
microcode : 0x8108109
cpu MHz : 2100.000
cache size : 512 KB
physical id : 2
siblings : 1
core id : 0
cpu cores : 1
apicid : 2
initial apicid : 2
fpu : yes
fpu_exception : yes
cpuid level : 13
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep ntrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm constant_tsc re
p_good nopl tsc_reliable nonstop_tsc cpuid extd_apicid tsc_known_freq pni pclmulqdq ssse3 fma cx16 sse4_1 sse4_2 x2apic moveb popcnt aes xsave avx f16c rdrand hypervisor lahf_ll
m extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw topoext ssbd lpbp vmmcall fsbsbase bm1l avx2 smp bm12 rdseed adx snap clflushopt sha_ni xsaveopt xsavenc xgetbv1 x
saves clzero arat overflow recov succor
bugs : fxsave_leak sysret_ss_attrs null_seg spectre_v1 spectre_v2 spec_store_bypass rebbleed
bogomips : 4200.00
tlb_size : 2560 4K pages
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:
tyt@tyt-virtual-machine: $ sudo grep -c "svm\vmx" /proc/cpuinfo
0
tyt@tyt-virtual-machine: $
```

23. sudo apt-get update

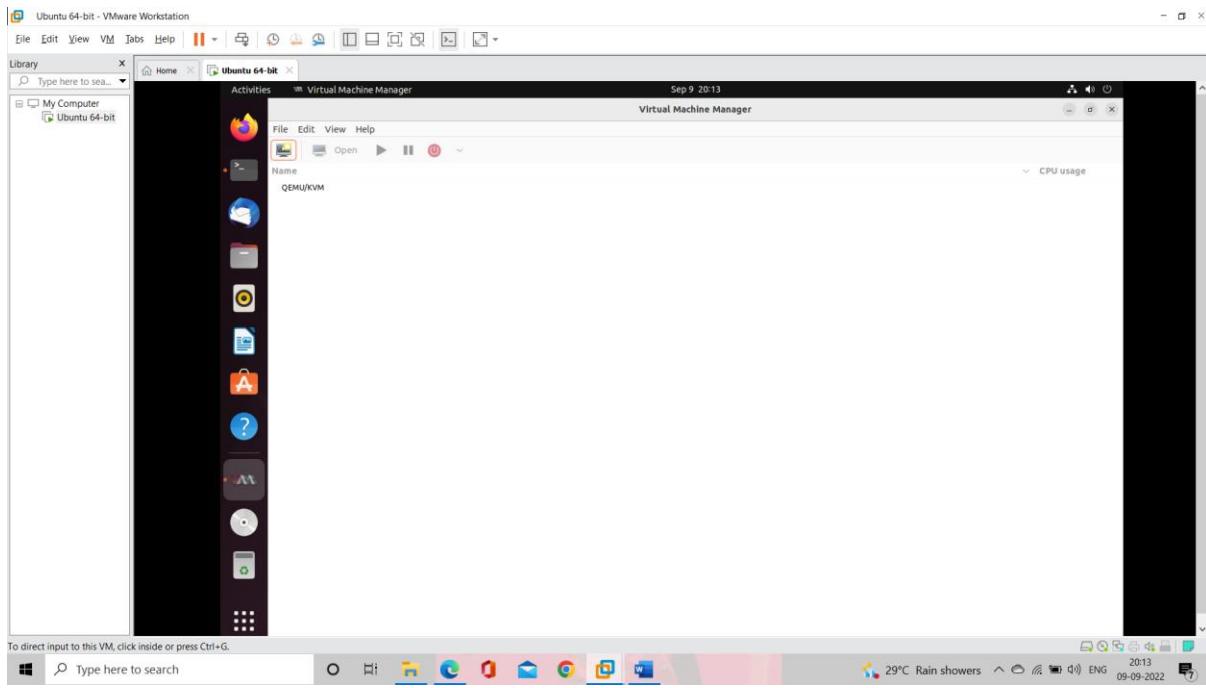
```
saves clzero arat overflow_recover_sucor
bugs : fxsave_leak sysret_ss_attrs null_seg spectre_v1 spectre_v2 spec_store_bypass rebled
bogomips : 4200.00
Tlb_size : 2560 4K pages
clflush_size : 64
cache_alignment : 64
address_sizes : 45 bits physical, 48 bits virtual
power management:
processor : 1
vendor_id : AuthenticAMD
cpu Family : 23
model : 24
model_name : AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx
stepping : 1
microcode : 0x81081B9
cpu Mhz : 2100.000
cache size : 512 KB
physical id : 2
siblings : 1
core id : 0
cpu cores : 1
apicid : 2
initial apicid : 2
fpu : yes
fpu_exception : yes
cpuid level : 13
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm constant_tsc re
p_pmd_noal_tsc tsc_nodrm nohlt nopl cpuid extd_apicid tsc_known_freq pni pclmulqdq ssse3 fma cx16 sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand hypervisor lahf_ll
maxapic CR8 legacy abm mrs mrsal misalignedprefetch osvw topexit ssbd lpbp vmcall fsgsbase bmt1 avx2 smp bml2 rdseed adx snap clflushopt sha_nl xsaveopt xsavetc xgetbv1 x
saves clzero arat overflow_recover_sucor
bugs : fxsave_leak sysret_ss_attrs null_seg spectre_v1 spectre_v2 spec_store_bypass rebled
bogomips : 4200.00
Tlb_size : 2560 4K pages
clflush_size : 64
cache_alignment : 64
address_sizes : 45 bits physical, 48 bits virtual
power management:
tylt@tylt-virtual-machine: $ sudo grep -c "svmlnx" /proc/cpuinfo
0
tylt@tylt-virtual-machine: $ sudo apt-get update
Hit:1 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://security.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
tylt@tylt-virtual-machine: $
```

24. sudo apt-get install qemu-kvm libvirt-daemon-system libvirt-clients bridge-utils

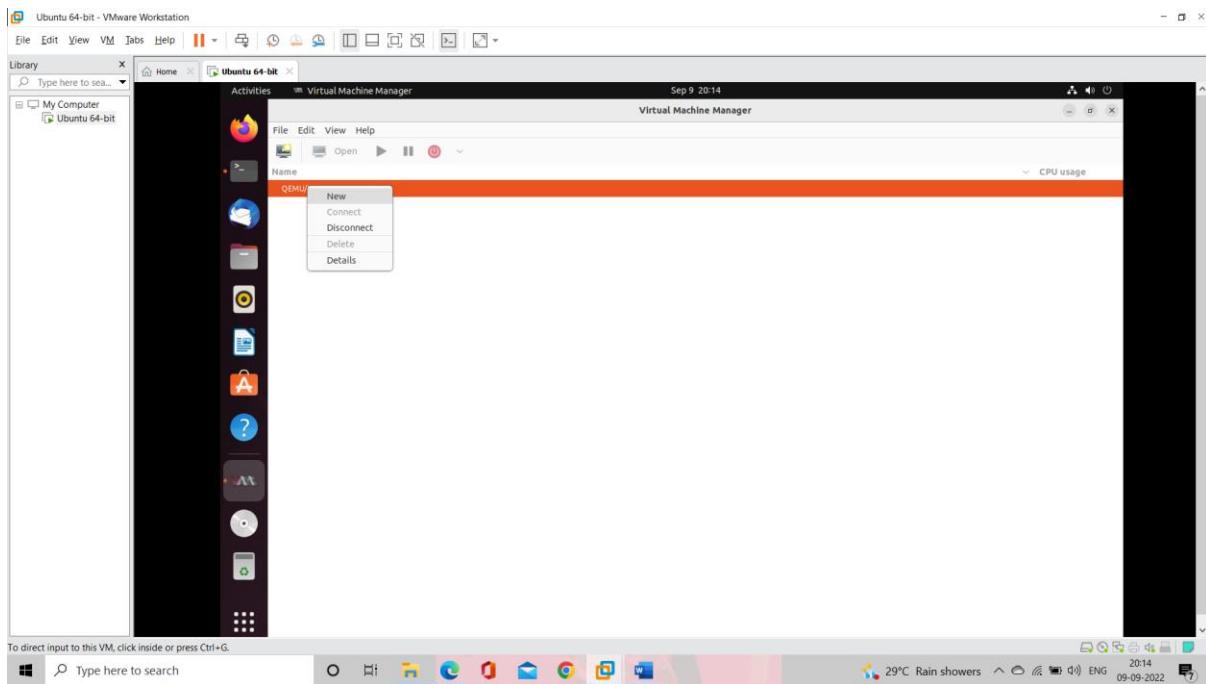
```
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease [99.8 kB]
Fetched 210 kB in 1s (166 kB/s)
Reading package lists... Done
tylt@tylt-virtual-machine: $ sudo apt-get install qemu-kvm libvirt-daemon-system libvirt-clients bridge-
utils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'qemu-system-x86' instead of 'qemu-kvm'
E: Unable to locate package install
E: Unable to locate package bridge-utils
tylt@tylt-virtual-machine: $ sudo apt-get install qemu-kvm libvirt-daemon-system libvirt-clients bridge-
utils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'qemu-system-x86' instead of 'qemu-kvm'
E: Unable to locate package install
tylt@tylt-virtual-machine: $ sudo apt-get install qemu-kvm libvirt-daemon-system libvirt-clients bridge-utils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'qemu-system-x86' instead of 'qemu-kvm'
bridge-utils is already the newest version (1.7-1ubuntu3).
libvirt-clients is already the newest version (8.0.0-1ubuntu7.1).
libvirt-daemon-system is already the newest version (8.0.0-1ubuntu7.1).
qemu-system-x86 is already the newest version (1:6.2+dfsg-2ubuntu6.3).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
tylt@tylt-virtual-machine: $ virt-manager
tylt@tylt-virtual-machine: $
```

25. Virtual Machine Manager is ready.

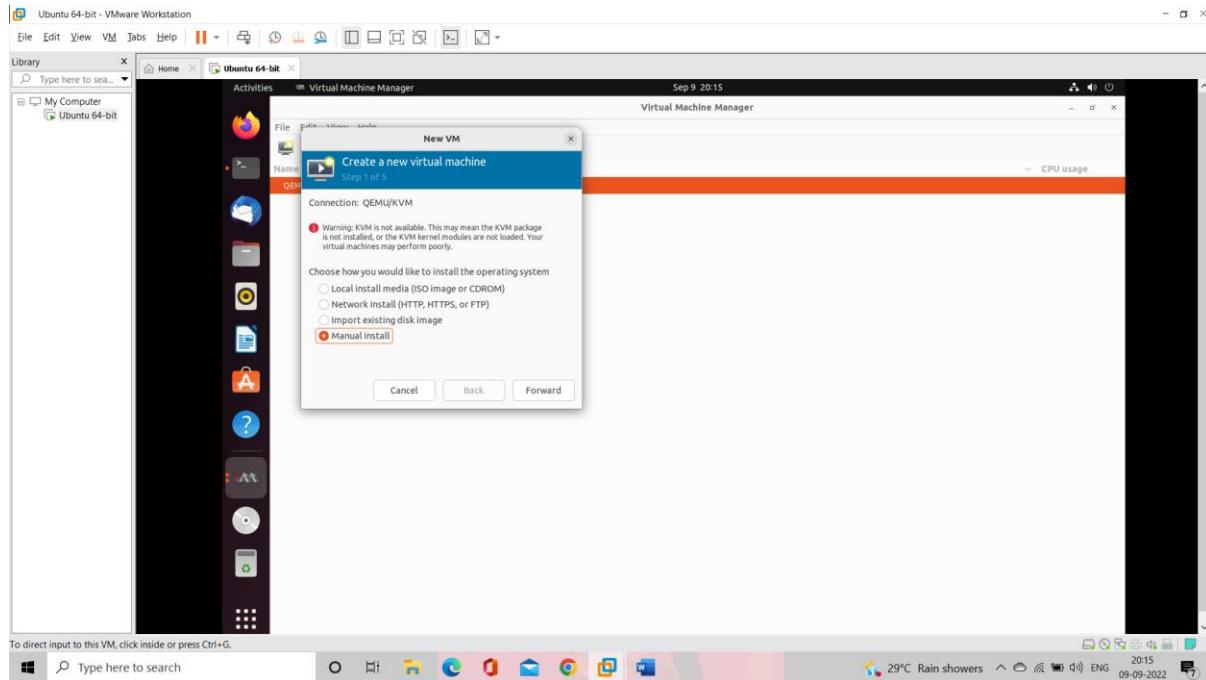
26. Output.



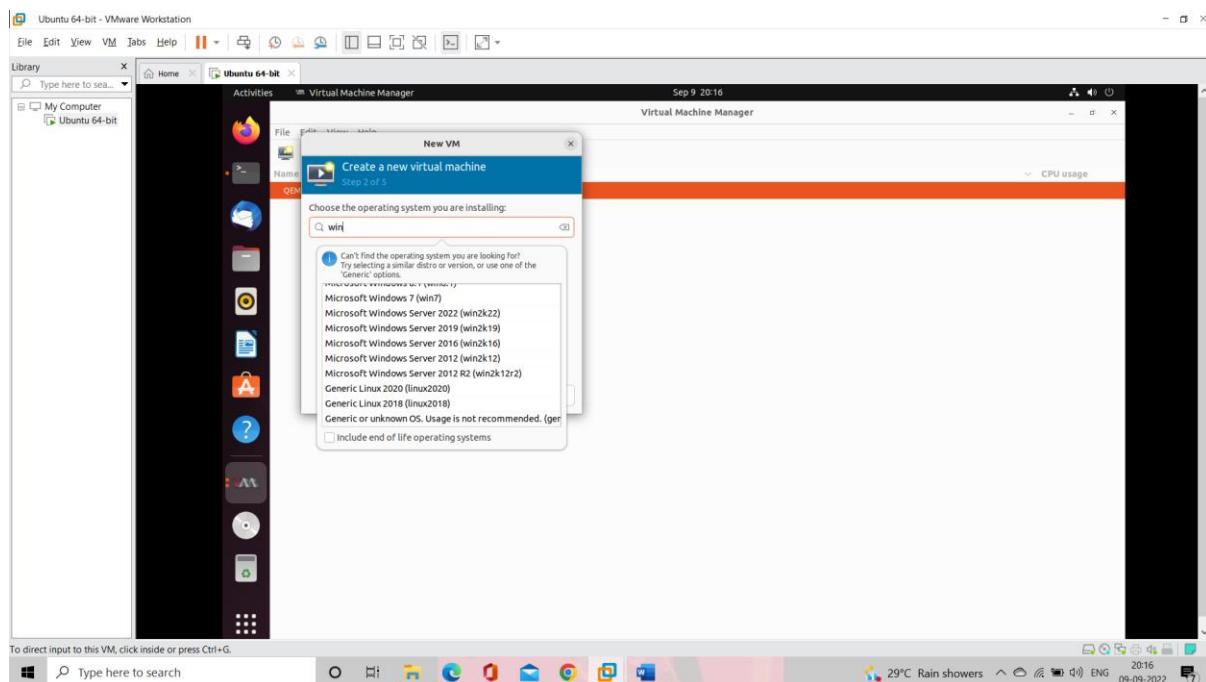
27. Right click on QEMU and select New.



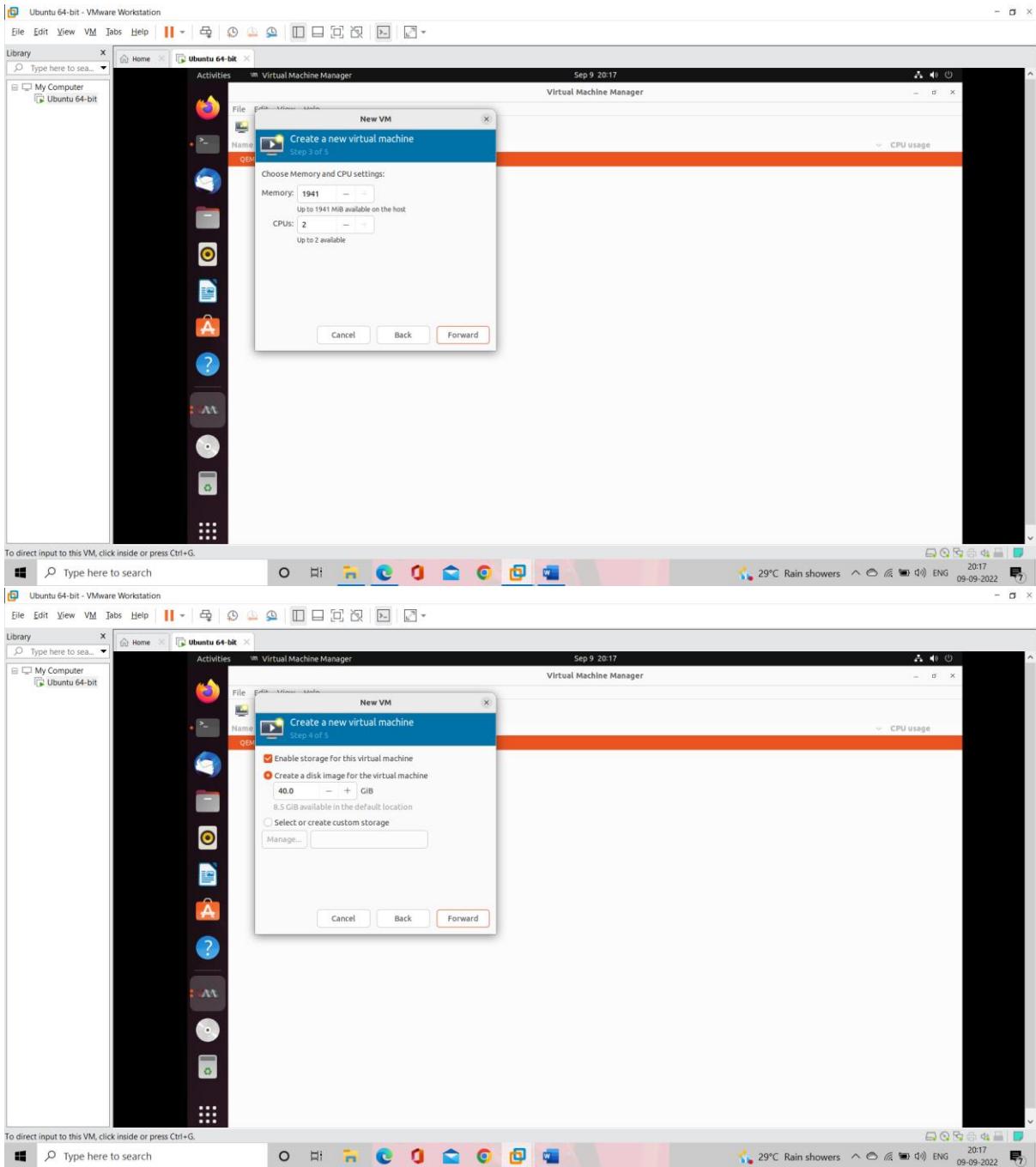
28. Select Manual Install for instant Installation or else you need to download iso of windows and then open it using other options.



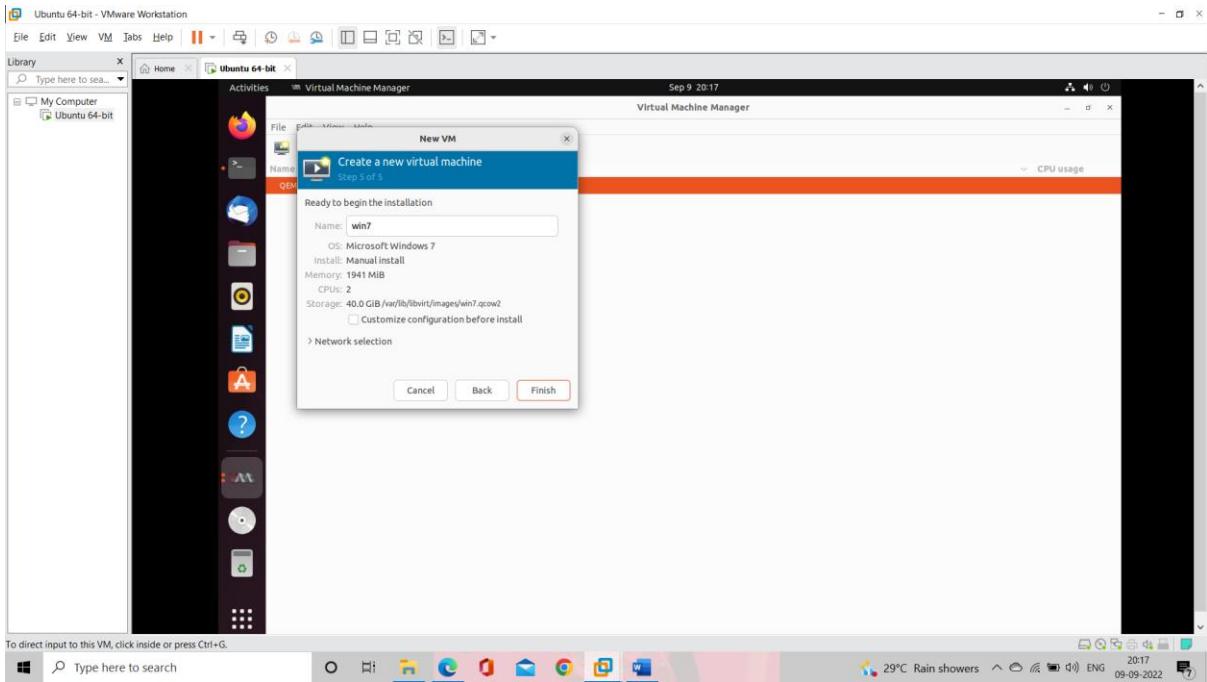
29. Install any version of windows you want to work with.



30. . Default Settings.



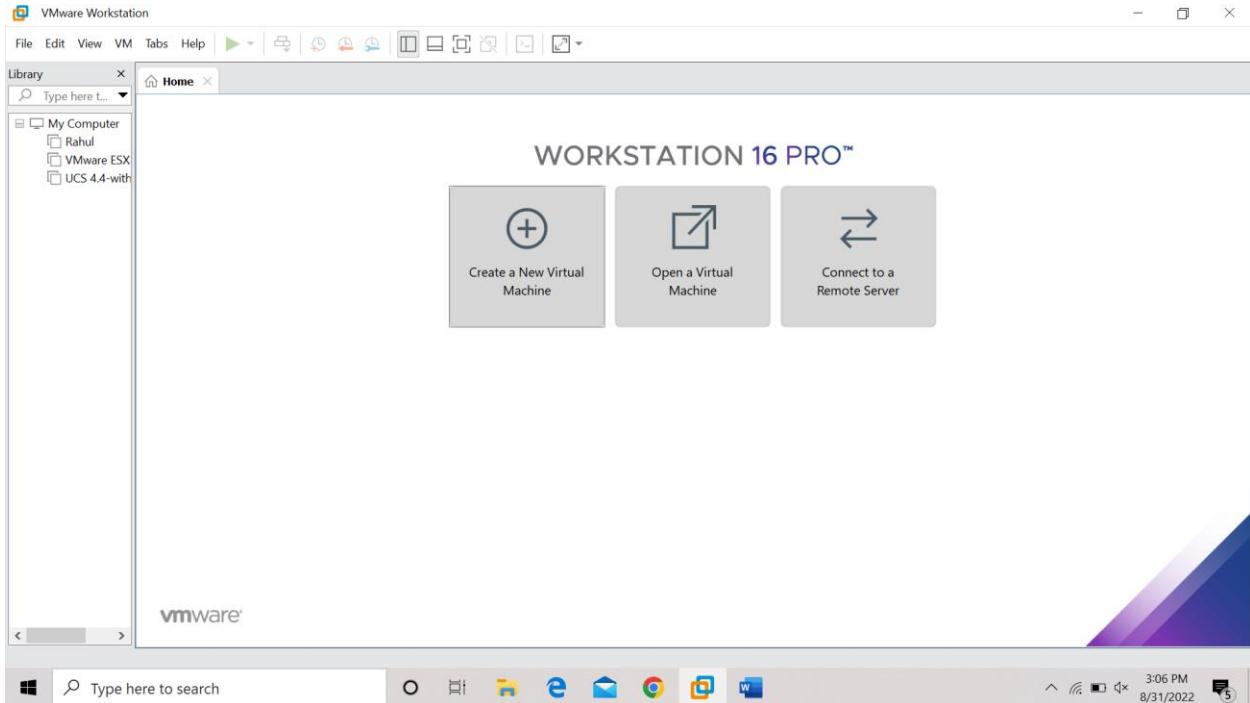
31. You can see win7 has appeared.



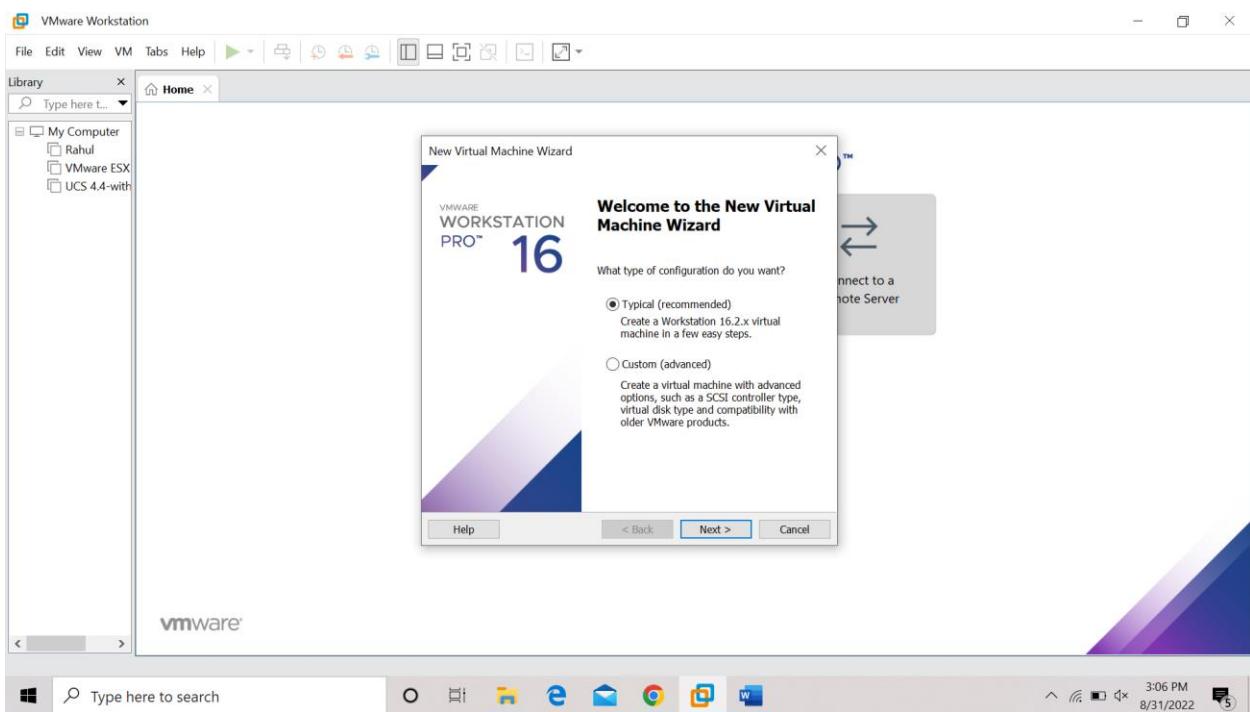
Practical 2

Steps:

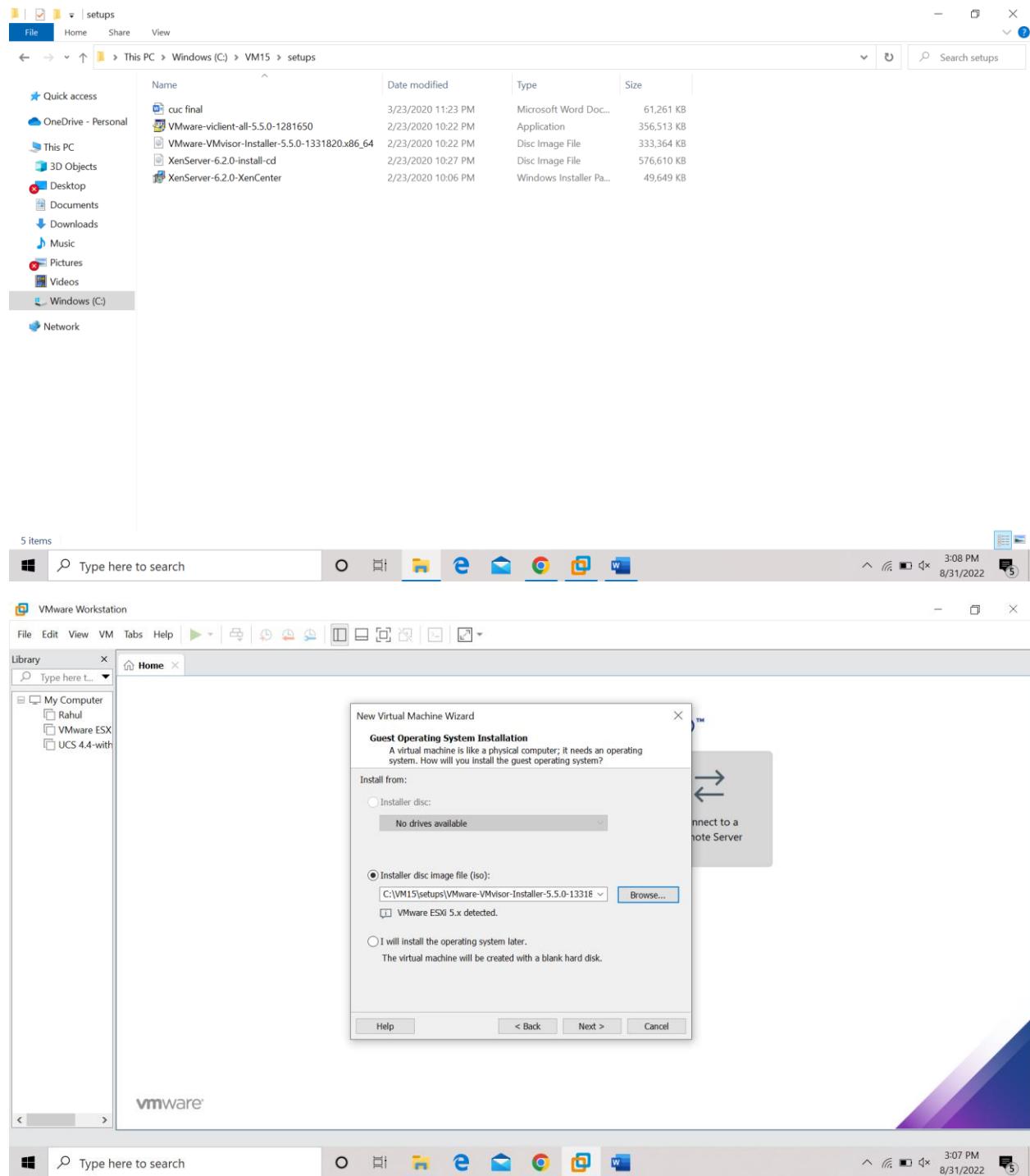
Step 1: Open VMware workstation.



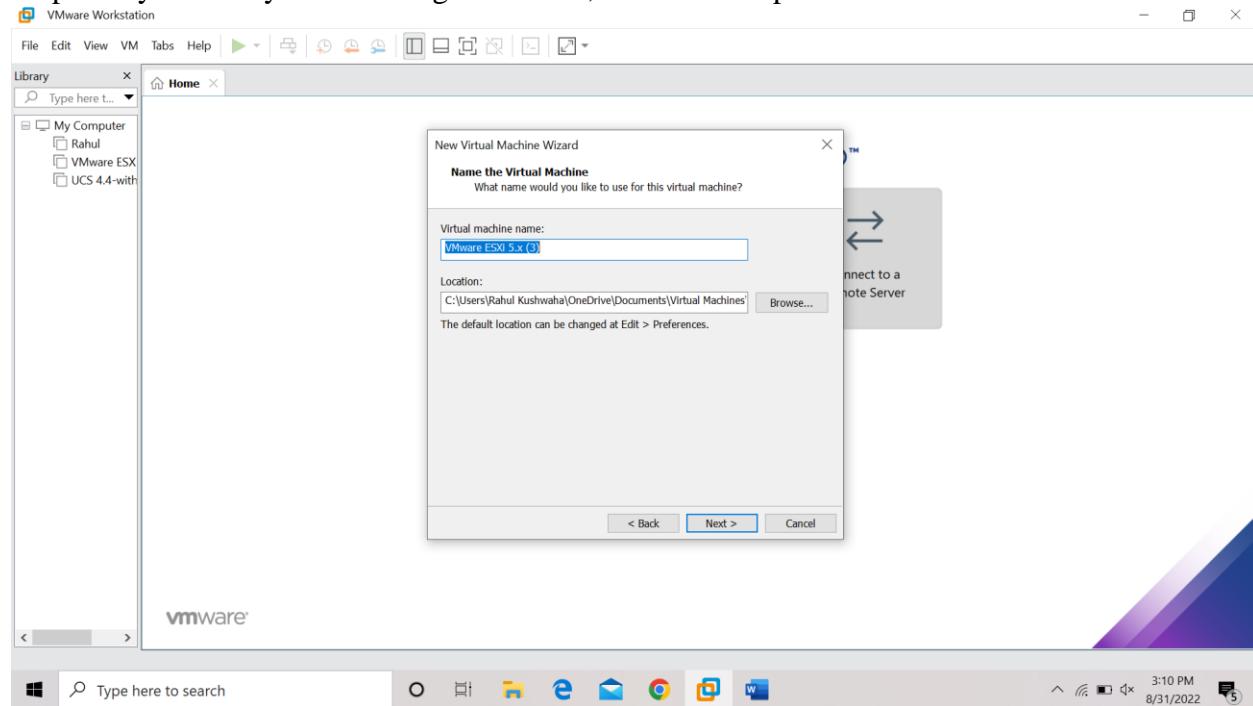
Step 2: click on create new virtual machine.



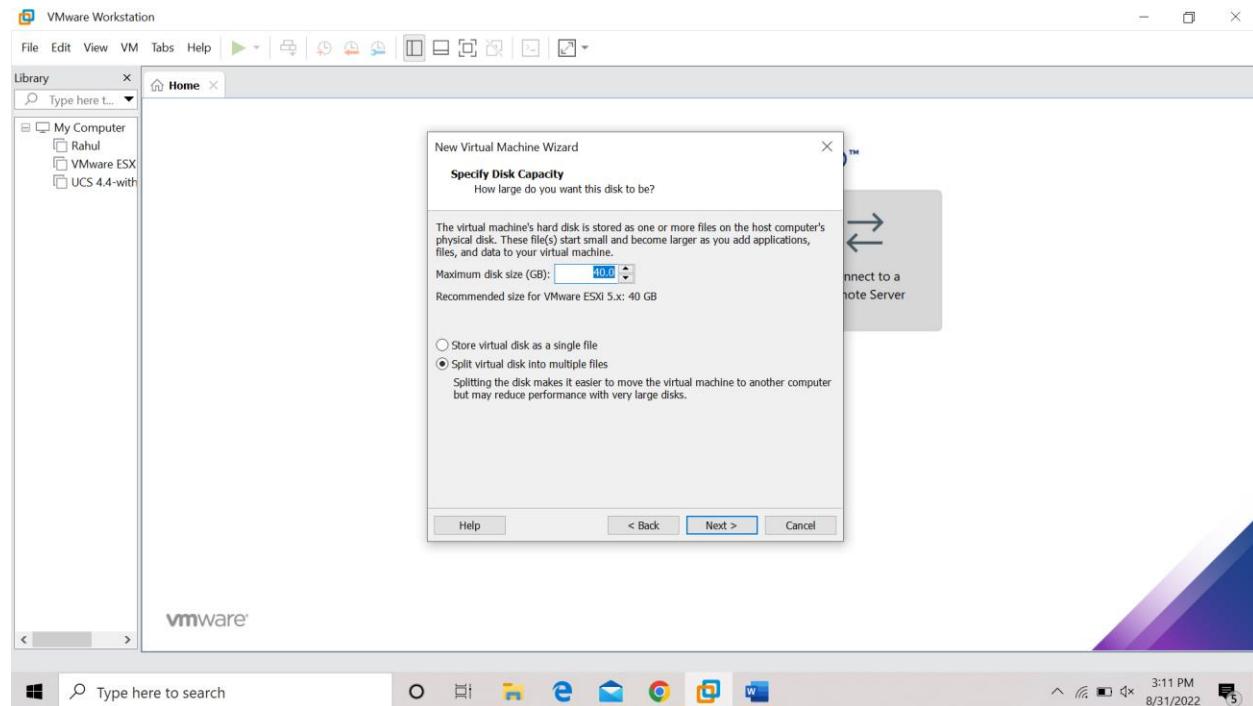
Step 3: Now in vmware click on use iso file and browse the extracted file and click on next.



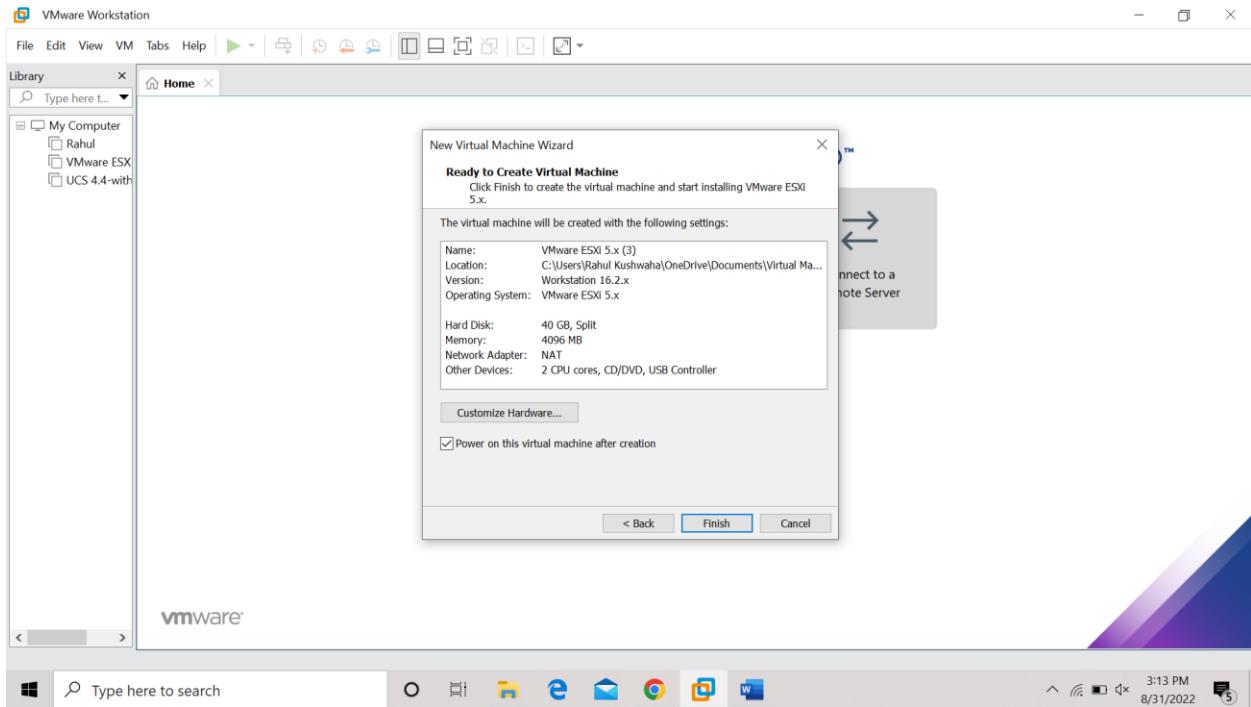
Step 4: If you want you can change the name, but I will keep the default.



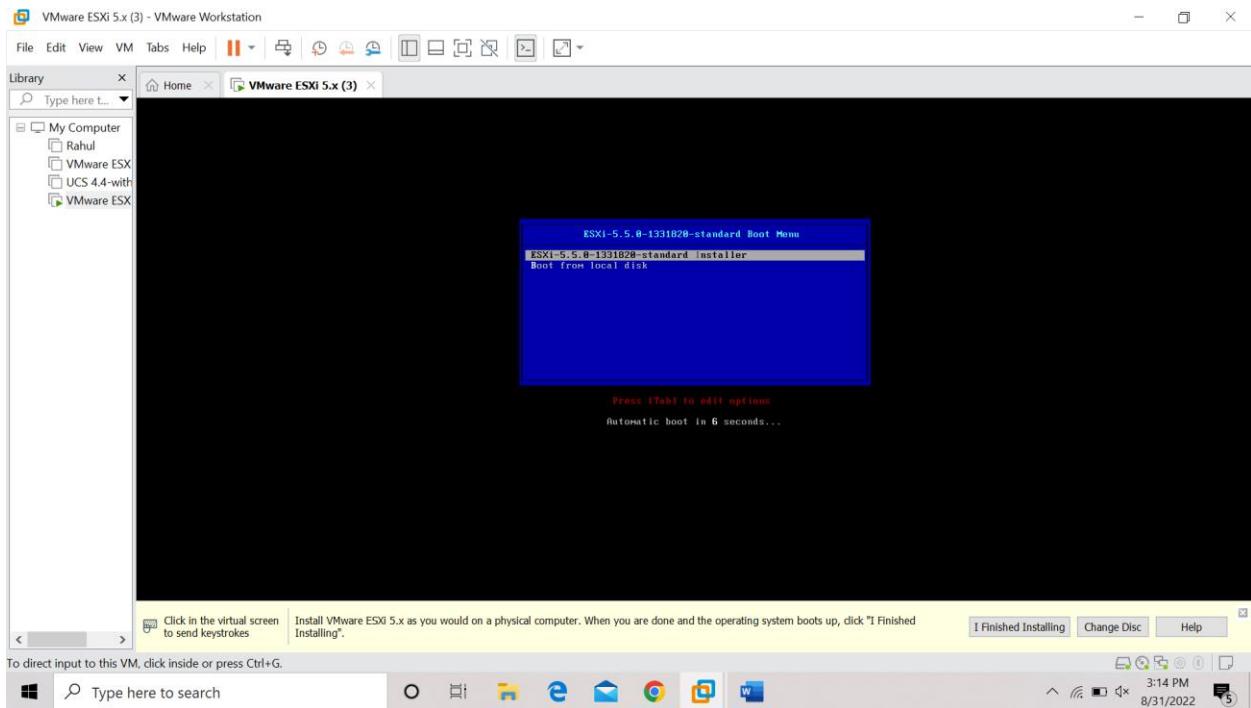
Step 5: Allocate maximum disk size, I will keep the defaults.

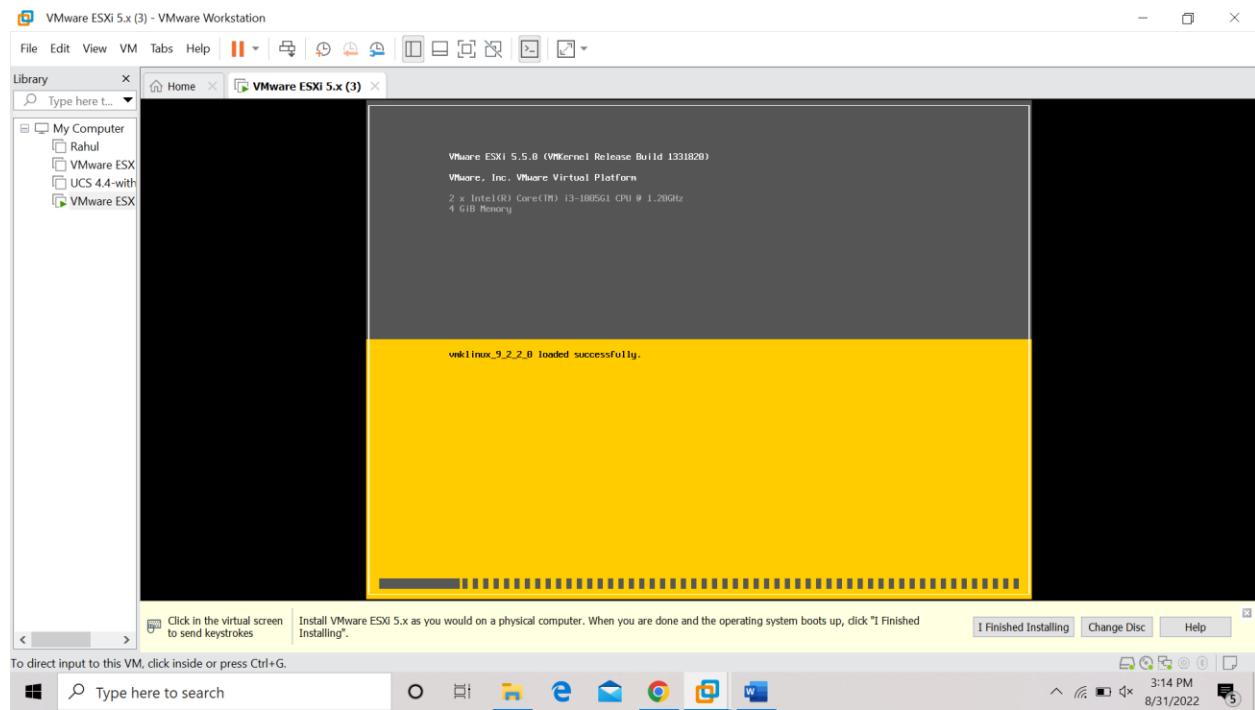


Step 6: These are the virtual machine details, click on finish.

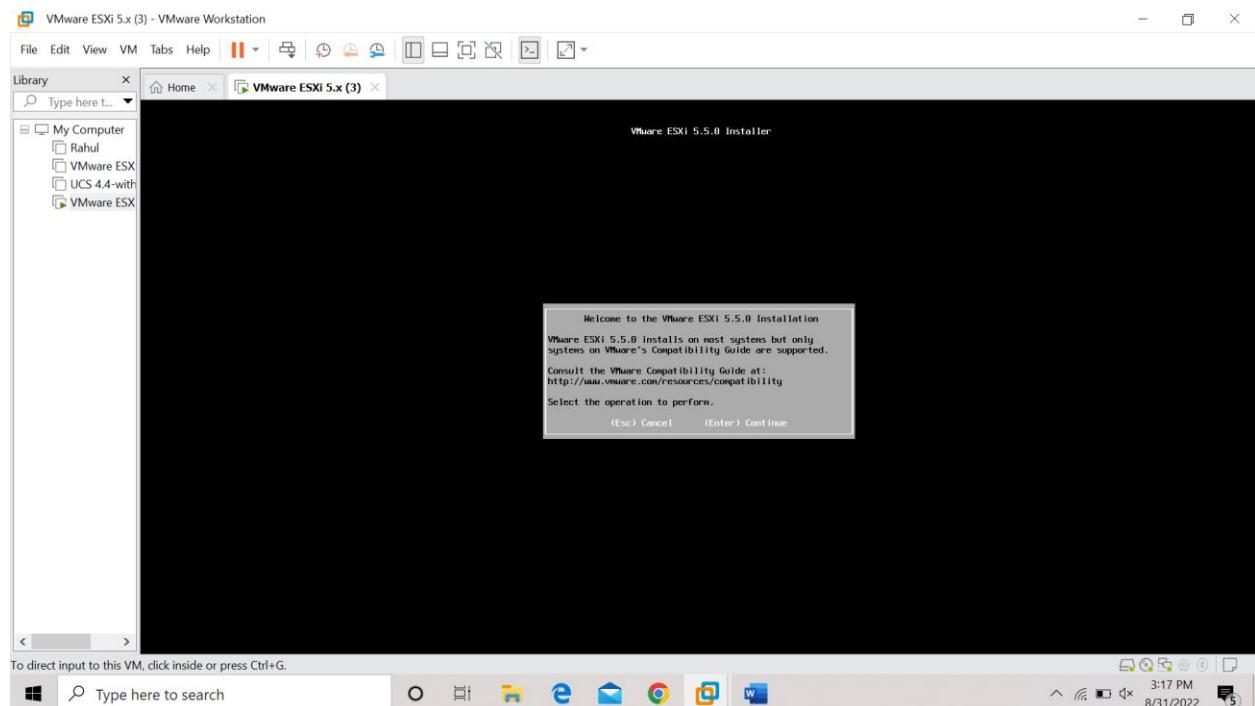


Step 7: Vmware esxi is being loaded.

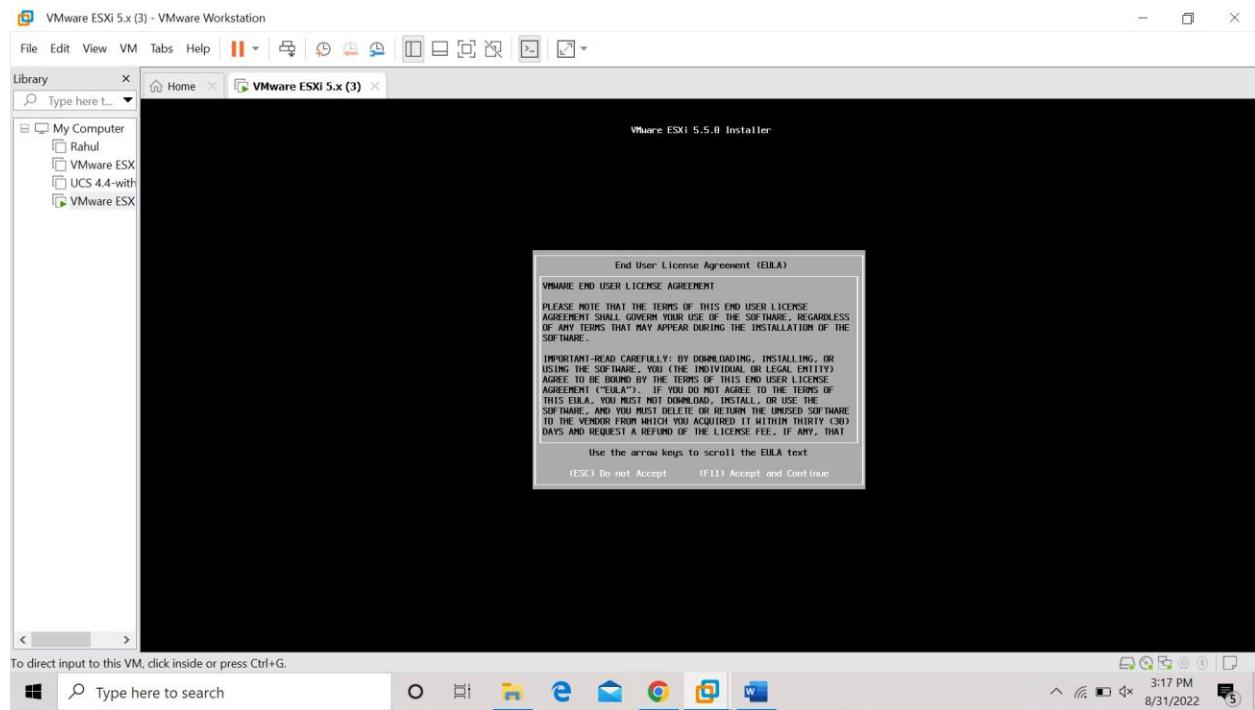




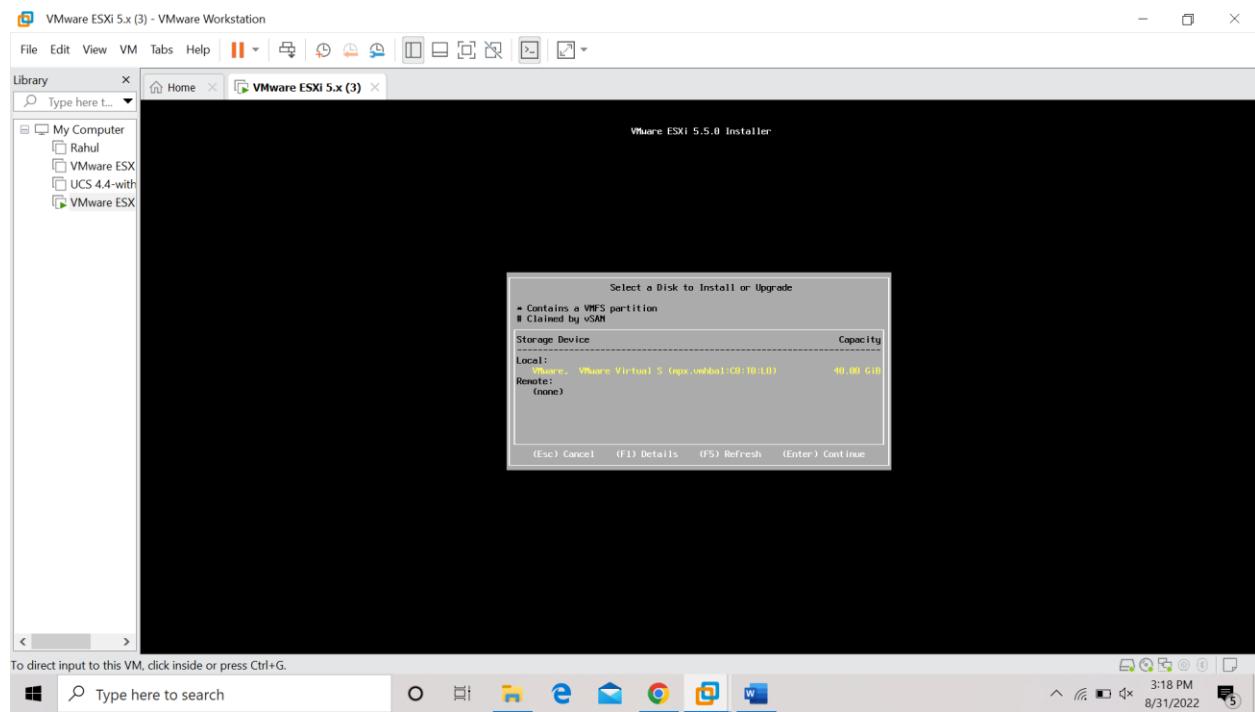
Step 8: click Enter



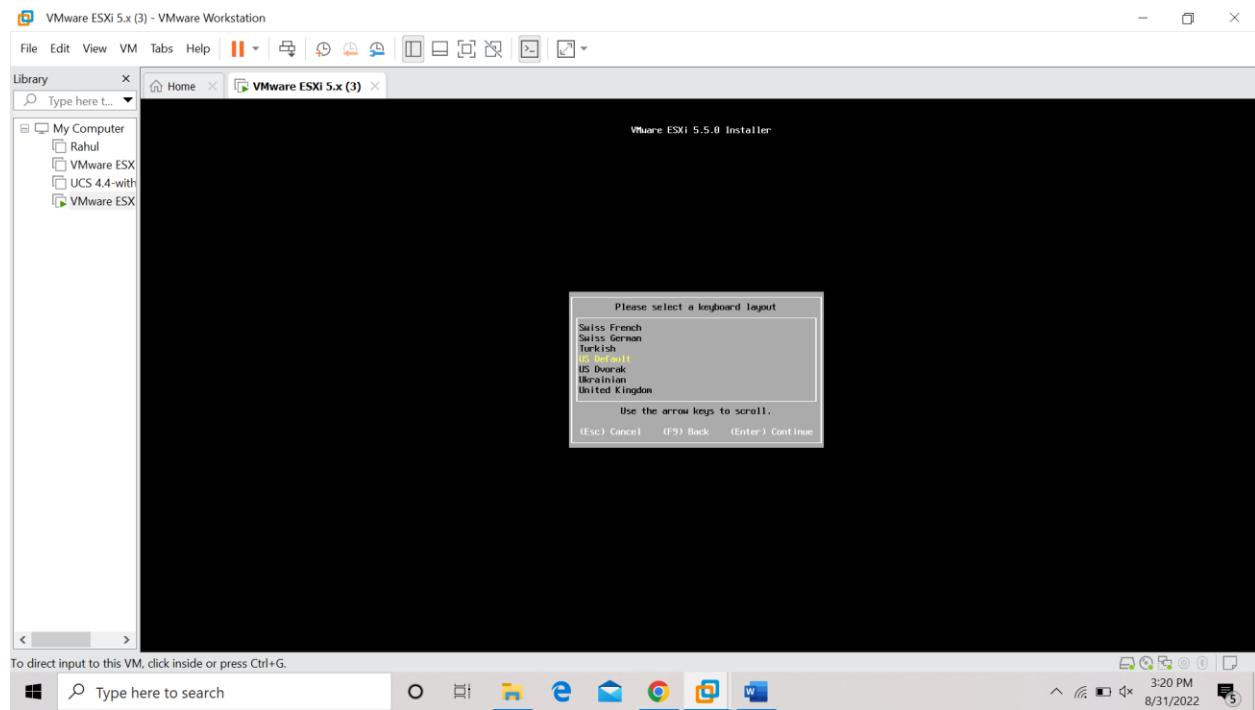
Step 9: Click F11.



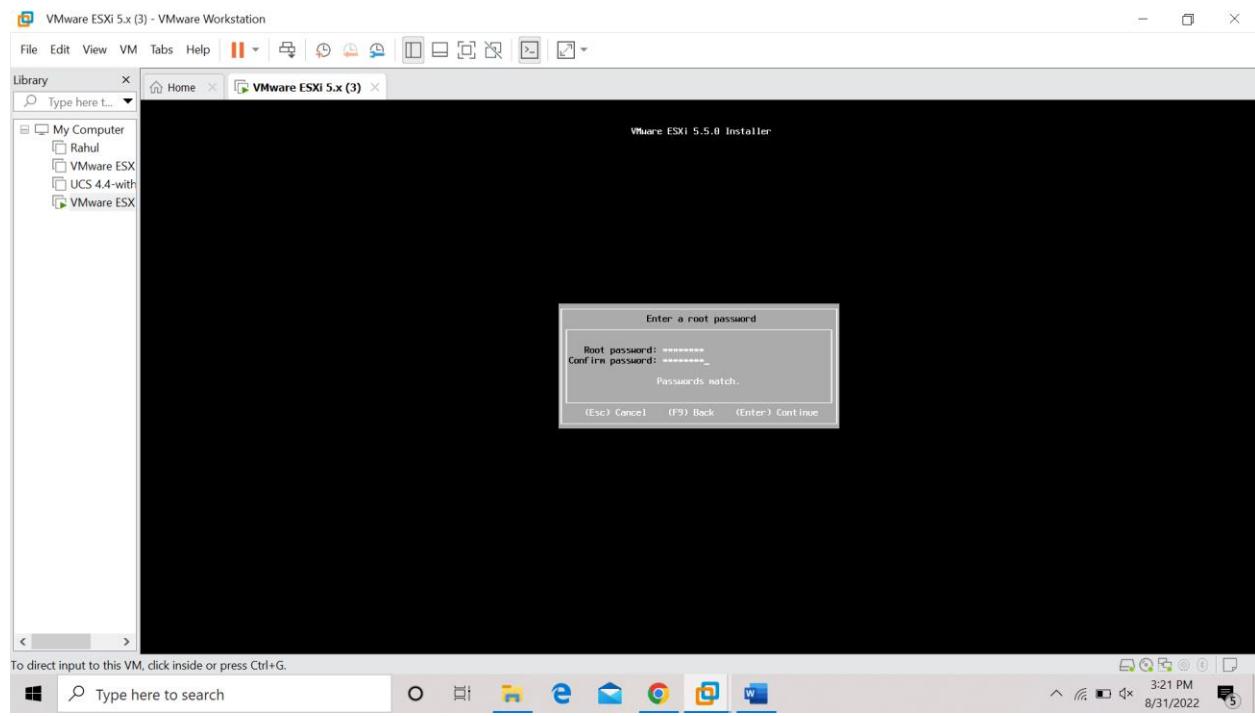
Step 10: click on continue.



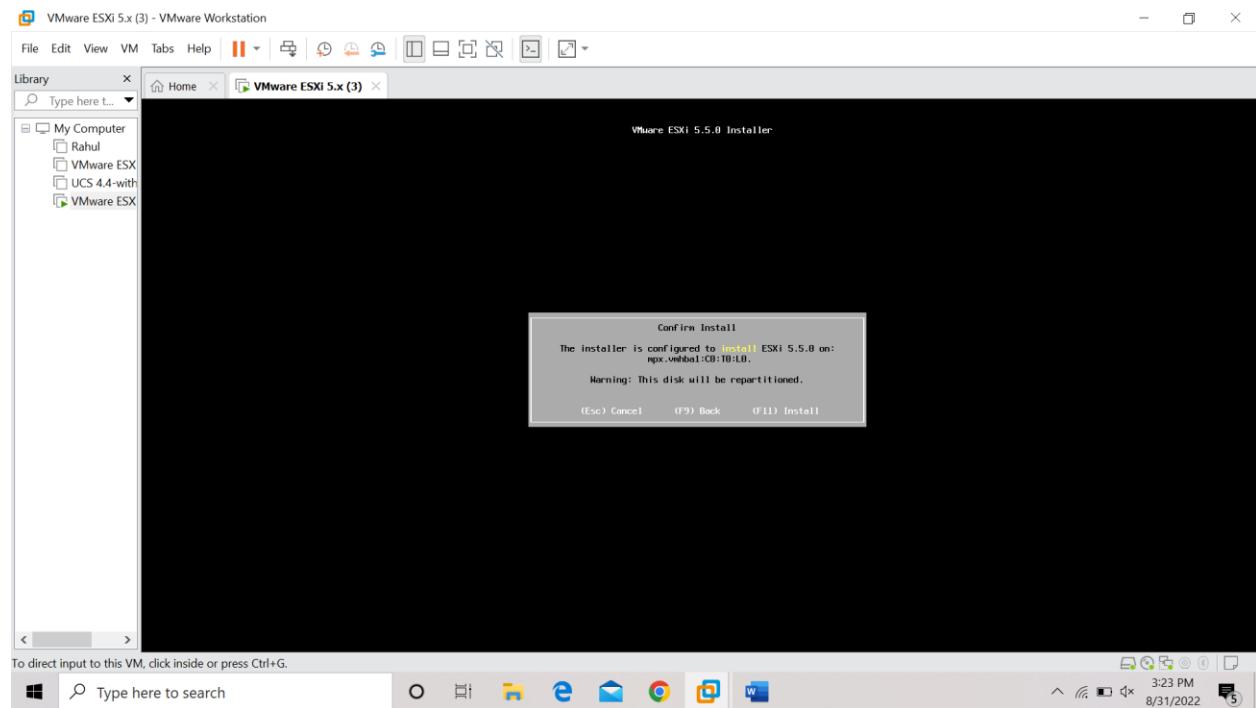
Step 11: default us click on continue.



Step 12: enter root password and then enter

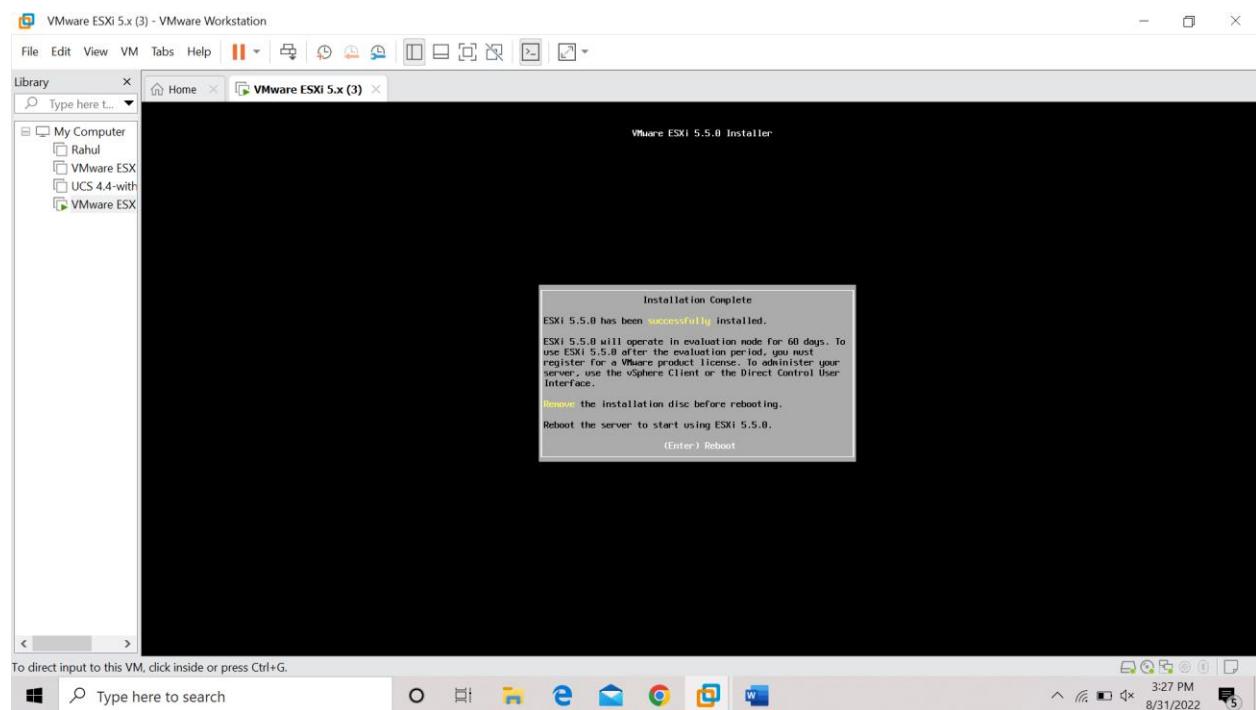


Step 13: click F11

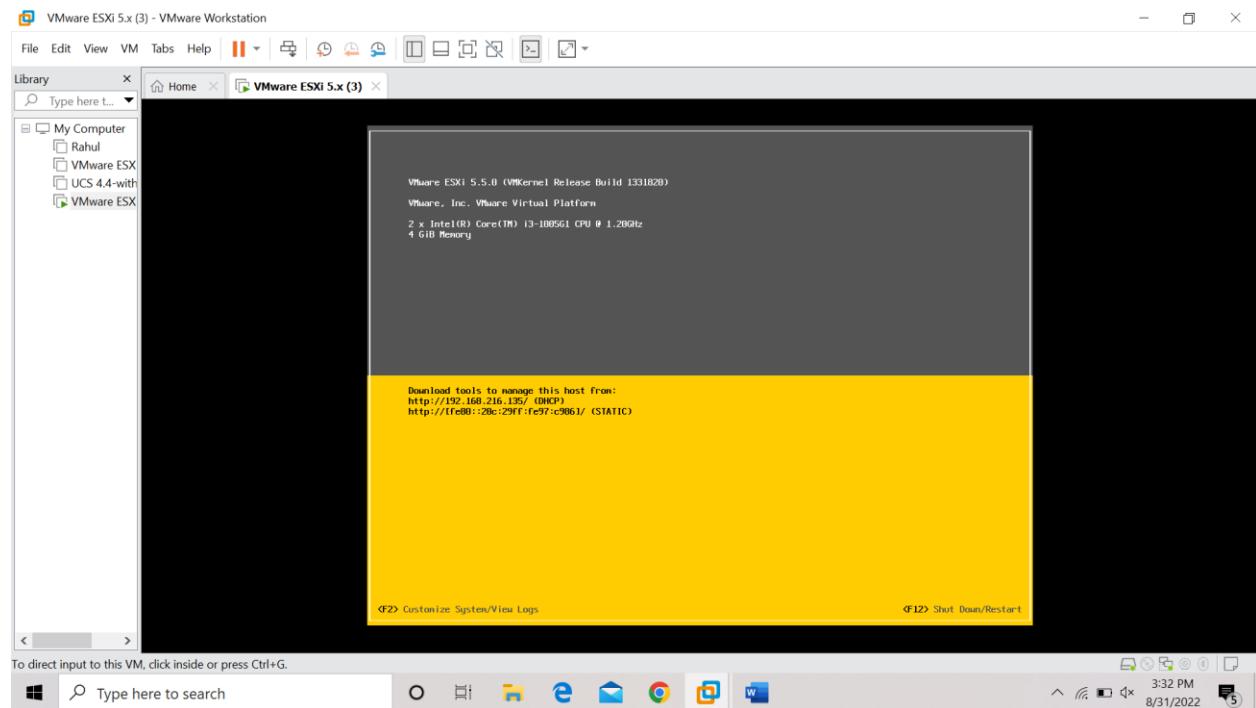


ESXI is being installed.

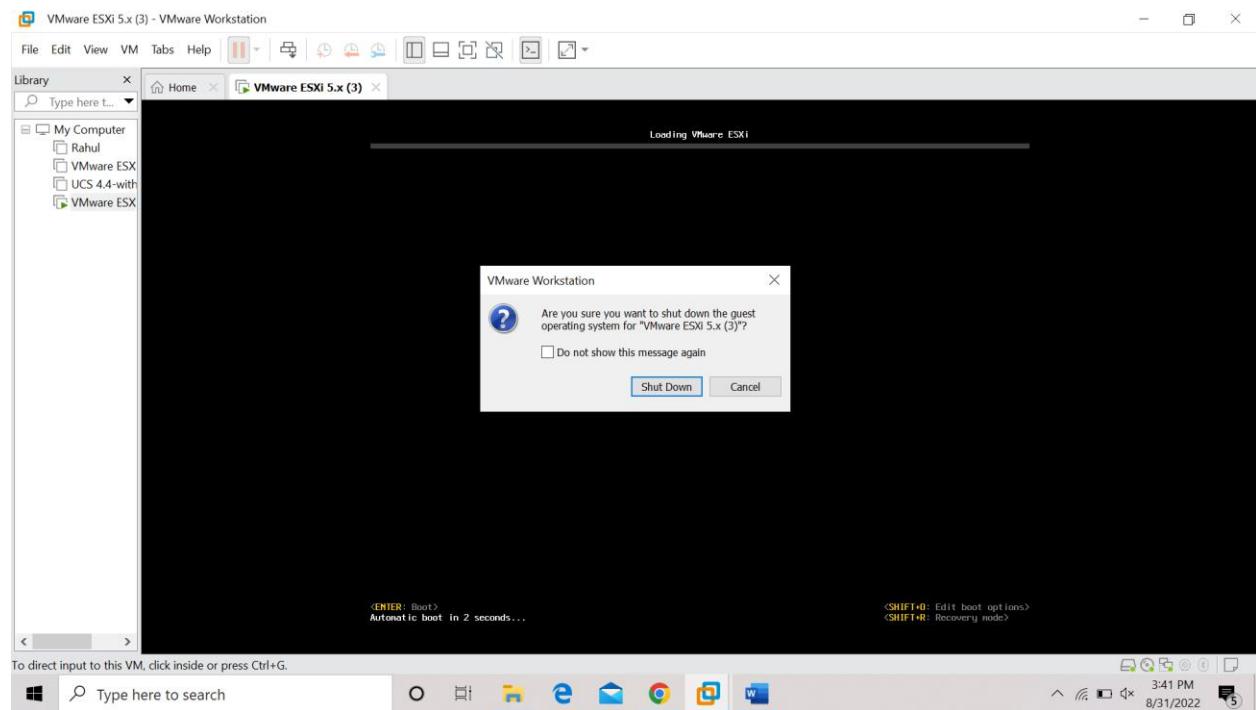
Step 14: press enter.



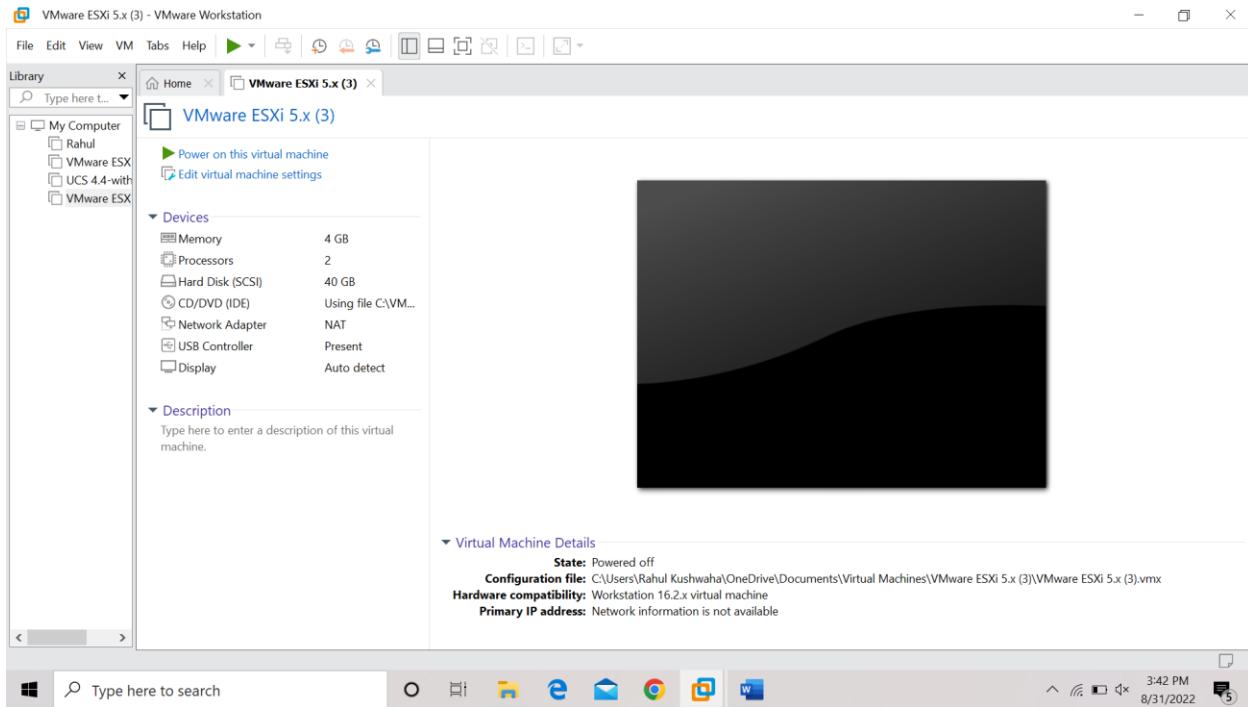
VMware esxi is installed.



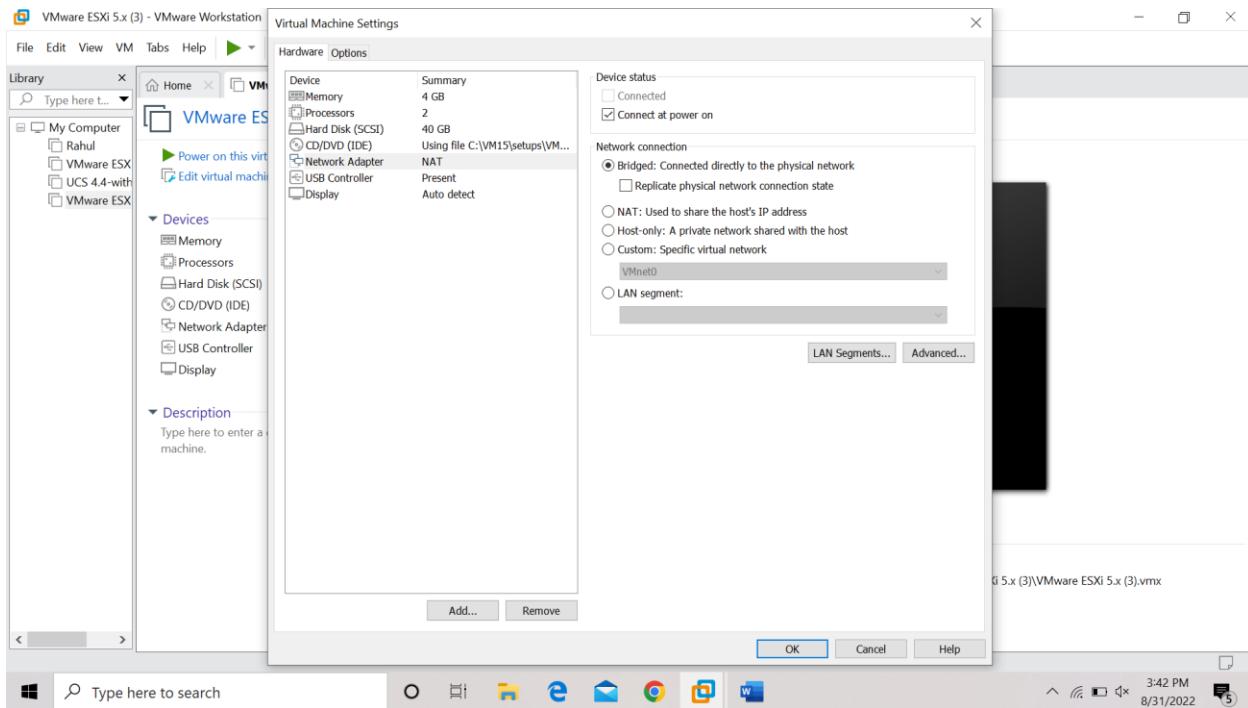
Step 15: Shut down the esxi machine.



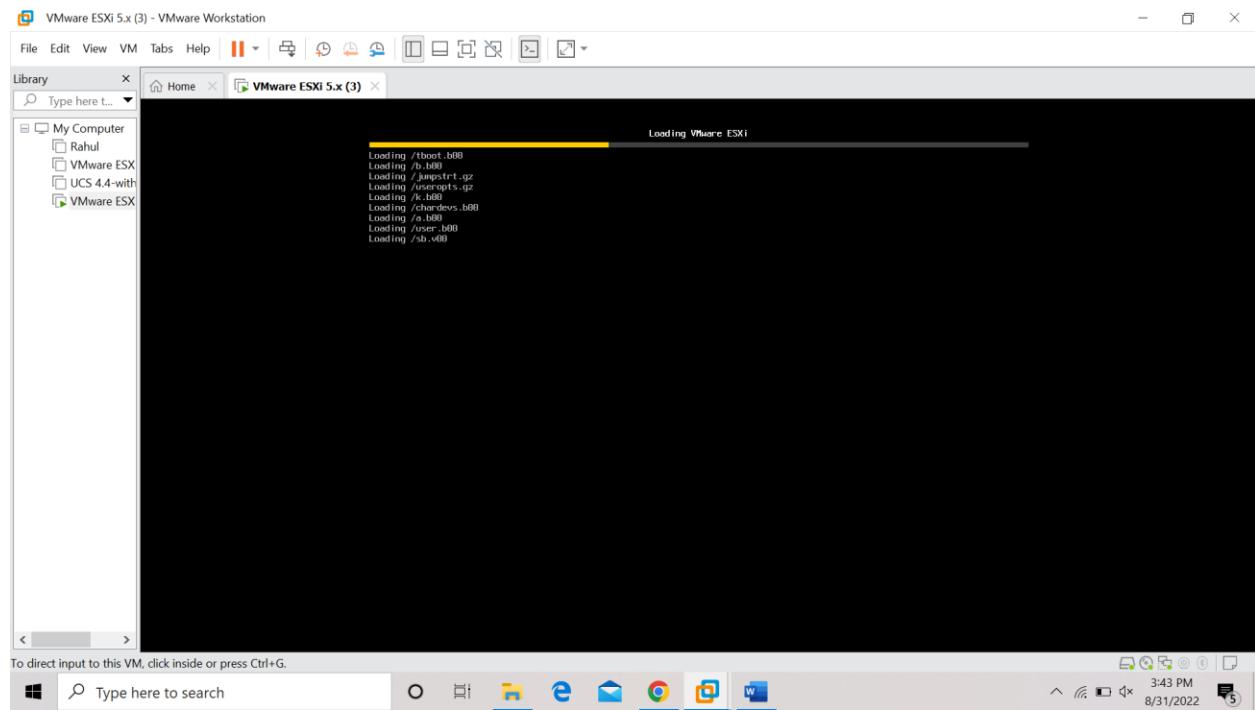
Step 16: Go to edit virtual machine settings



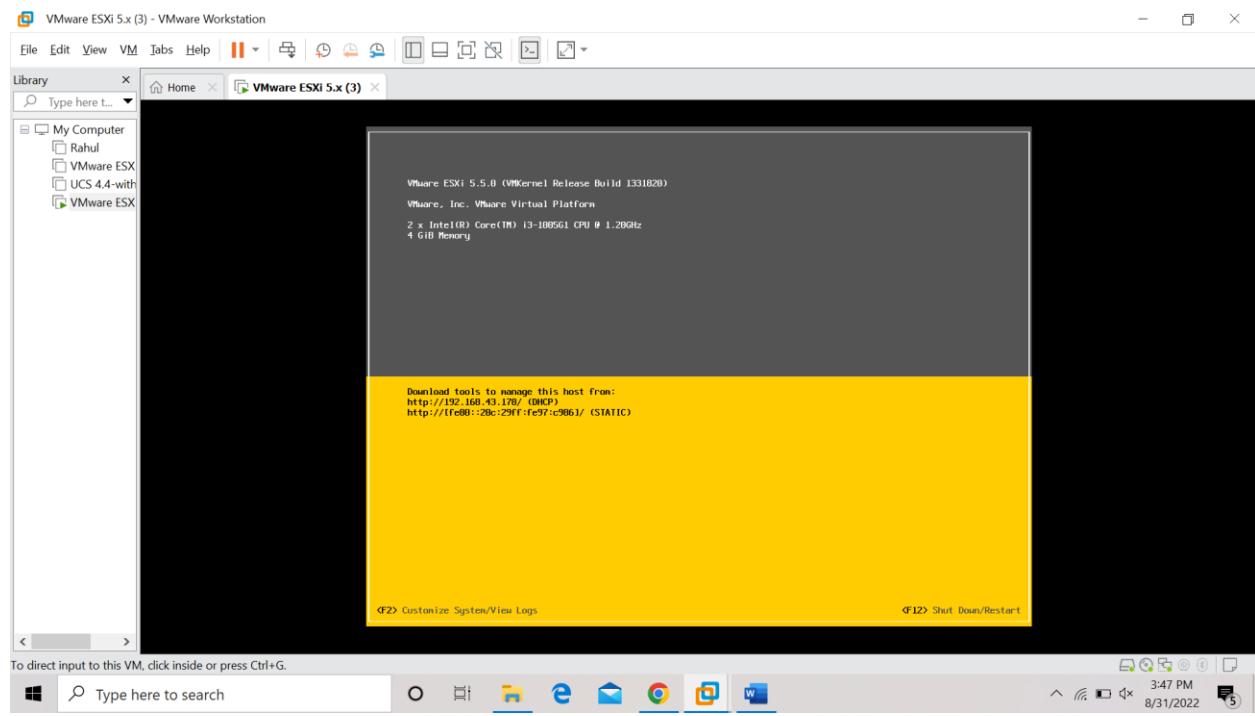
Step 17: Go to network adapter and select bridge and save.



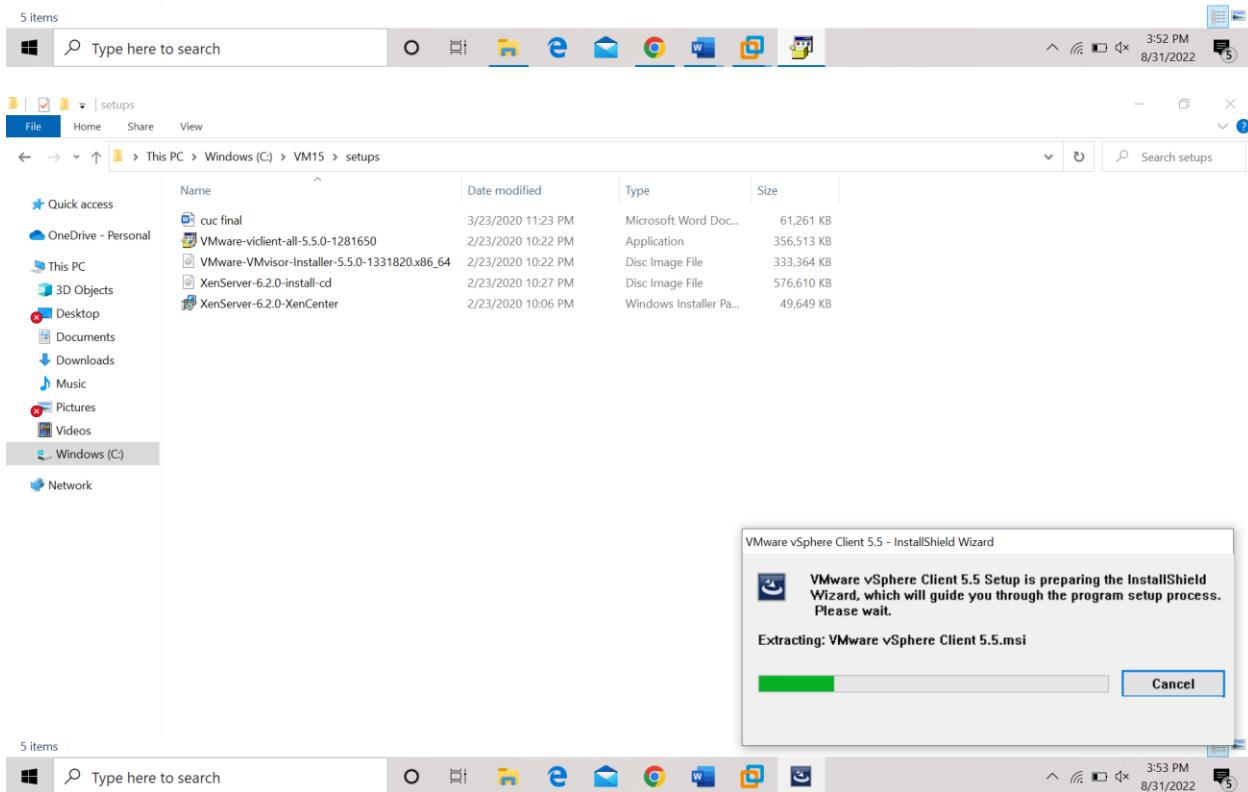
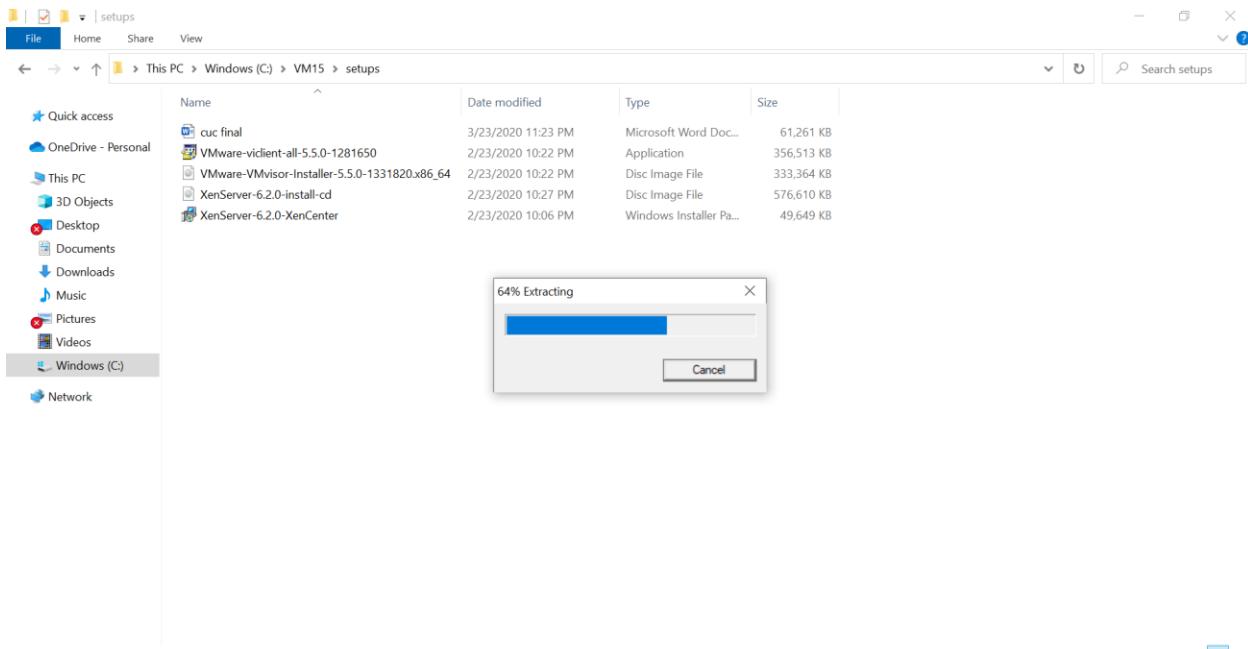
Step 18: Now start the esxi virtual machine.



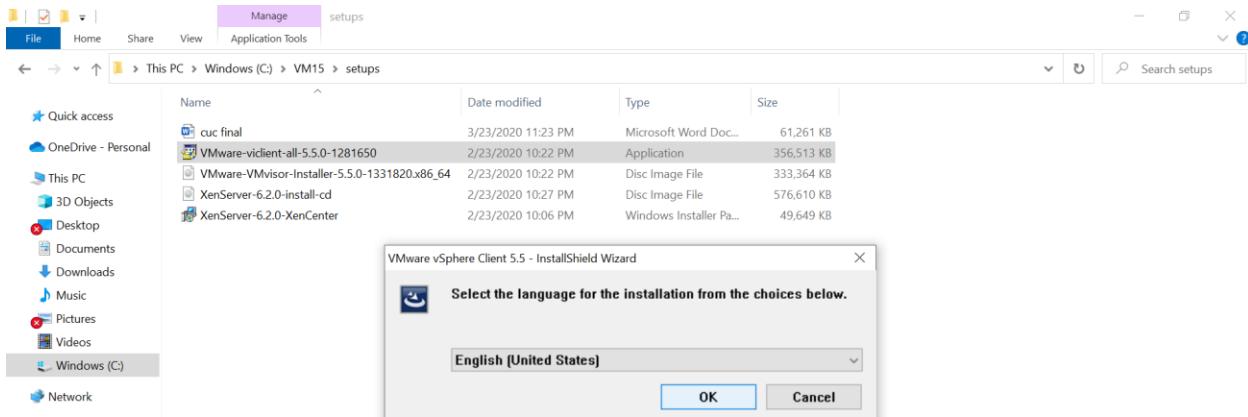
Step 19: After restarting OS it provide DHCP address (Note down the IP address).



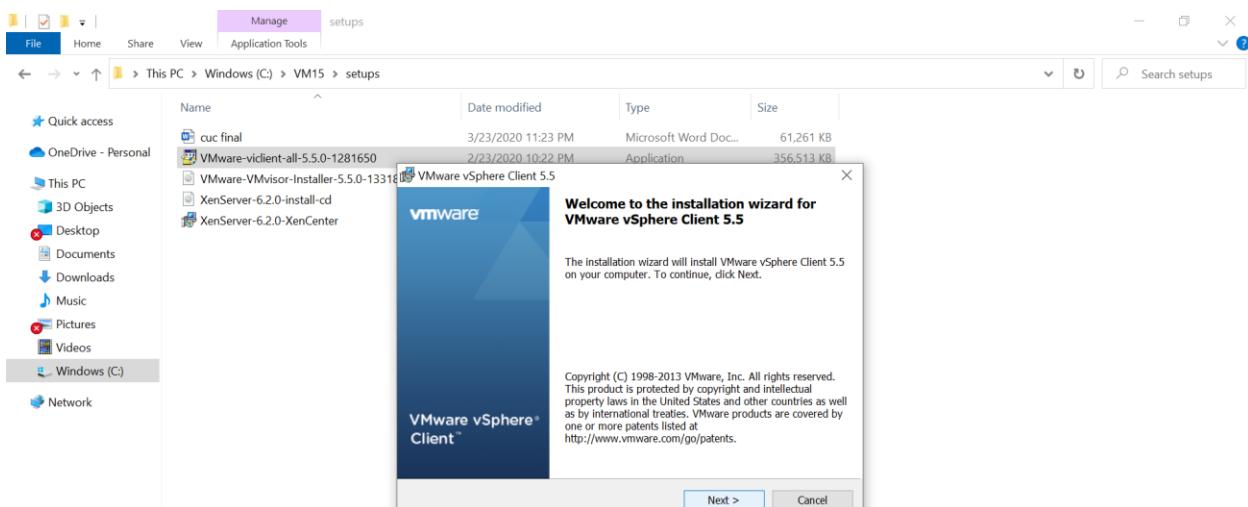
Step 20: Now on windows install client software



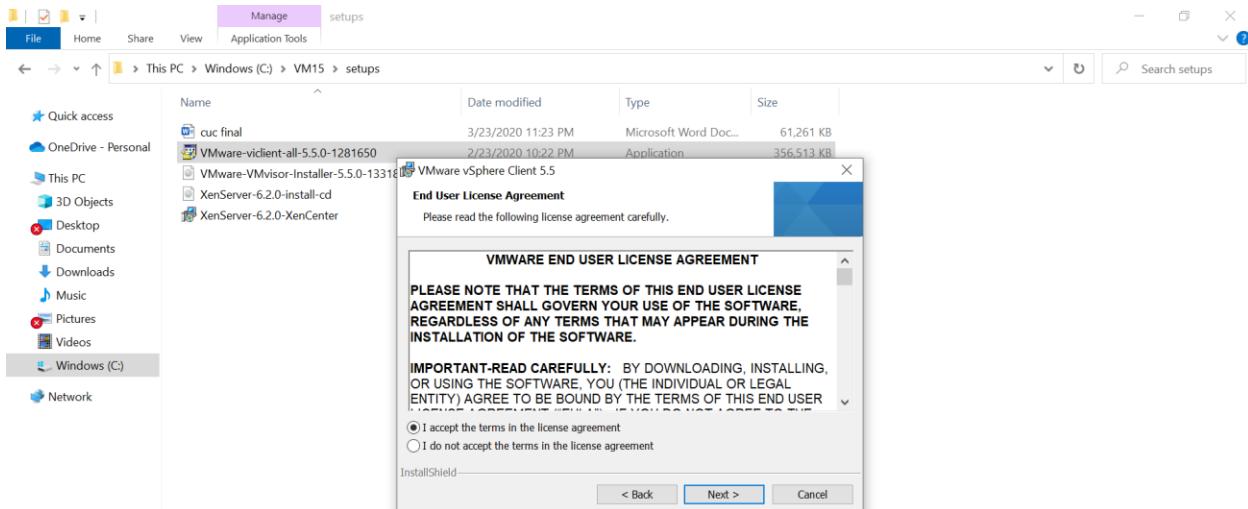
Step21 :- default language, and click on ok



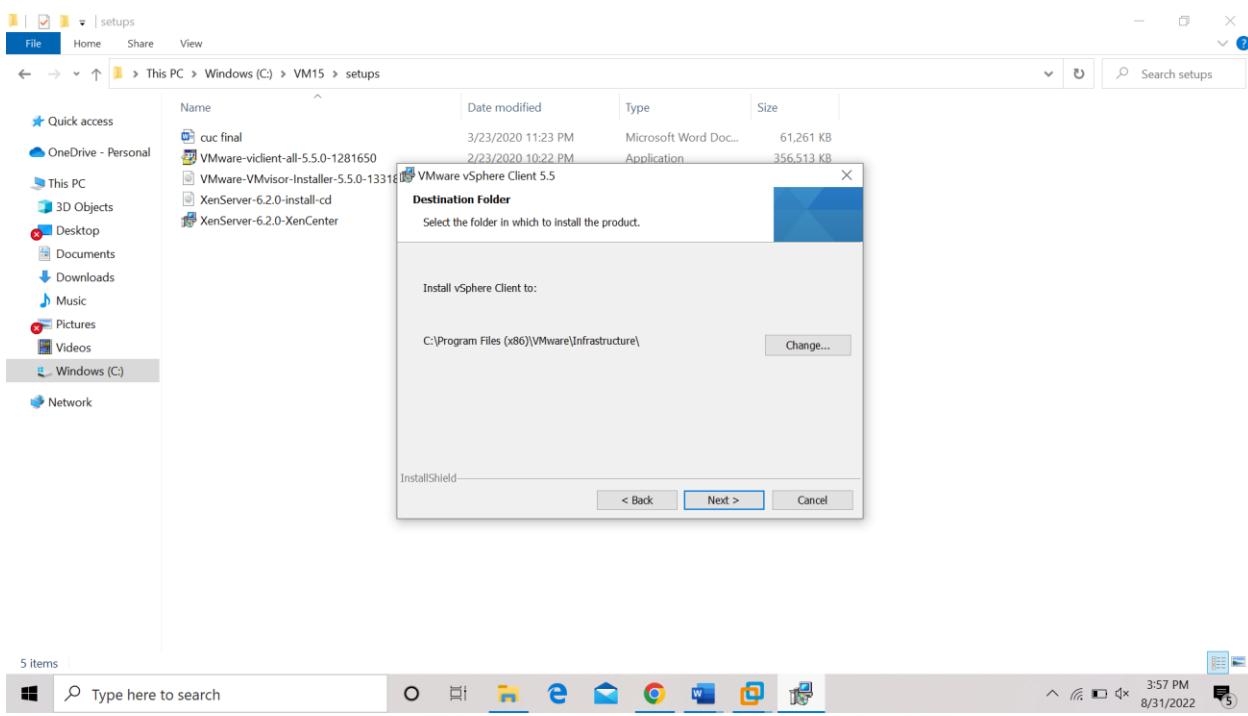
Step 22: Click on next



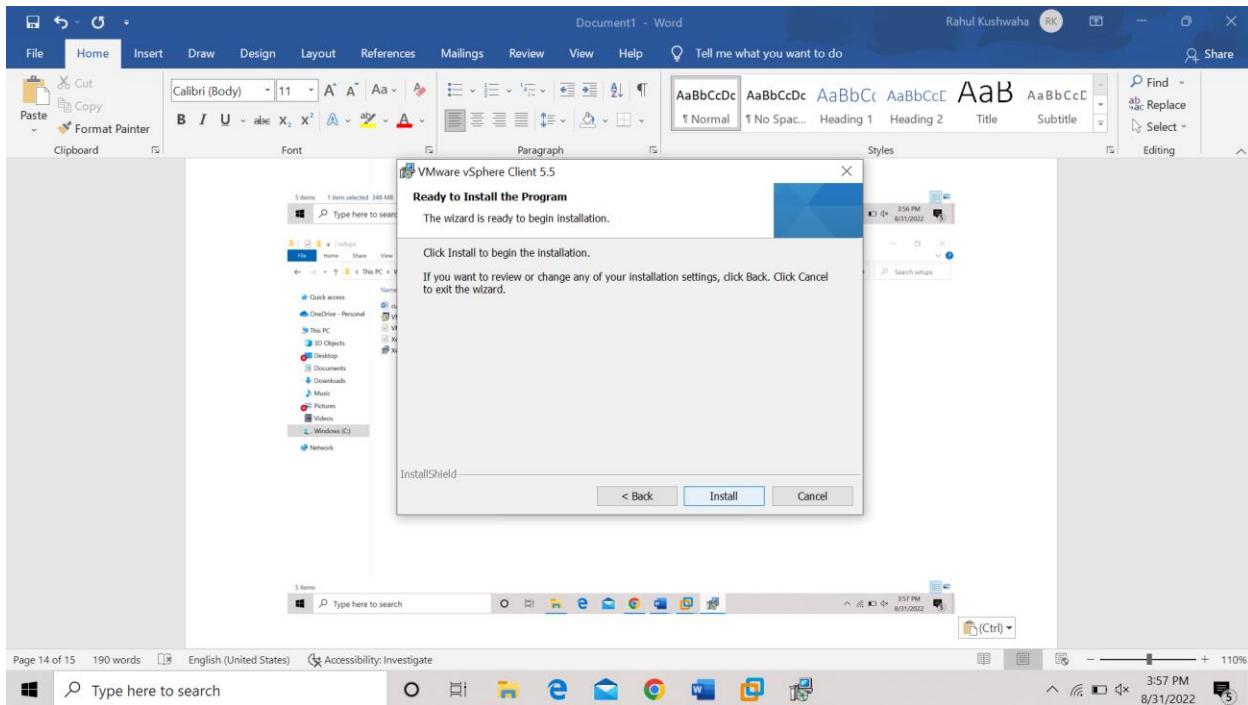
Step 23: allow the license agreement



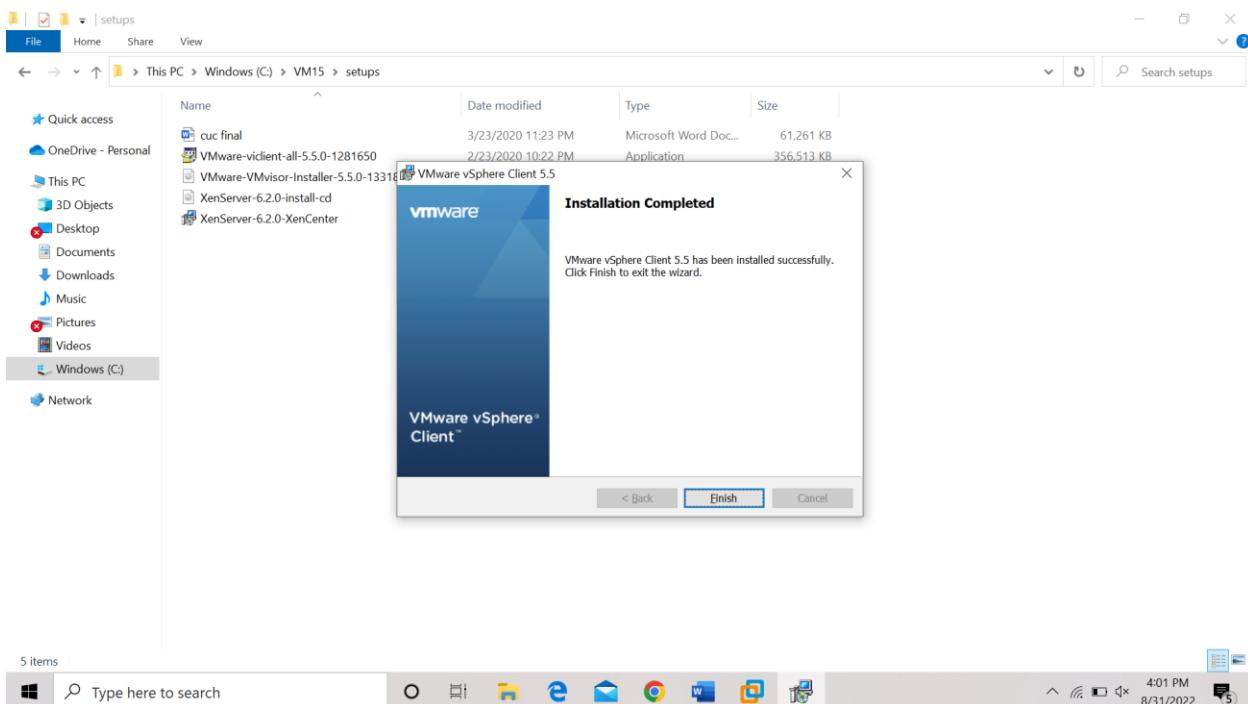
Step 24: Click on next



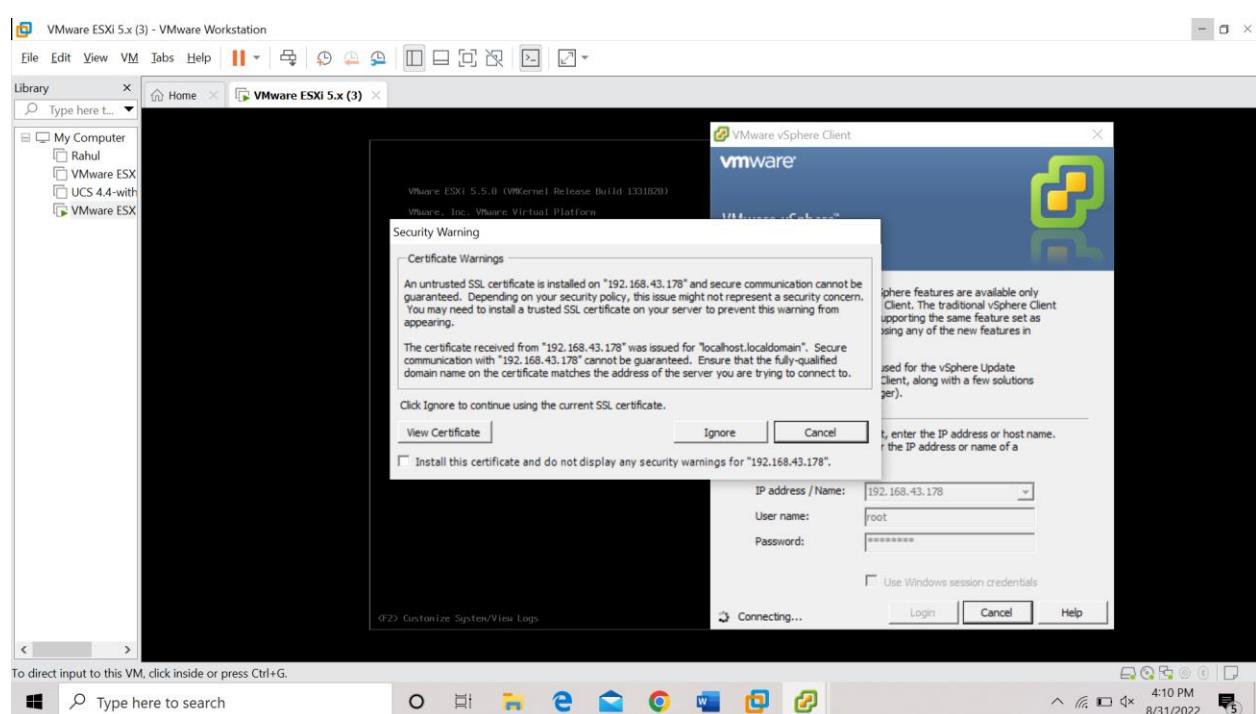
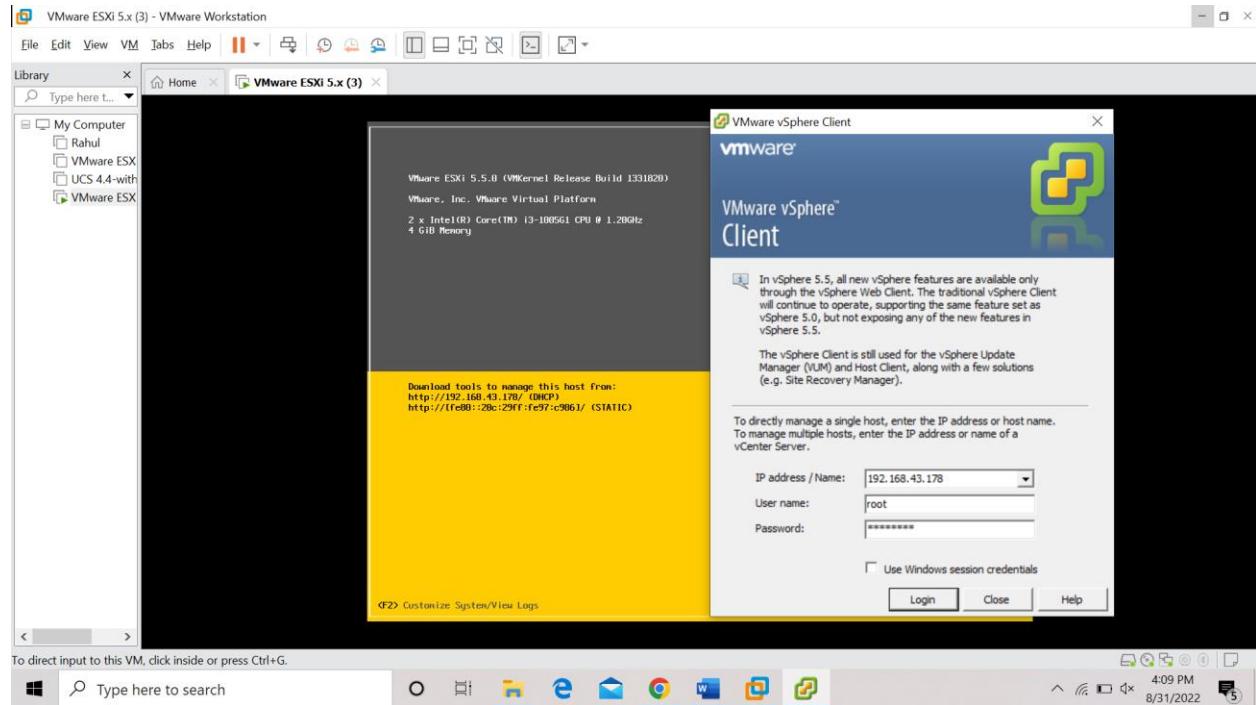
Step 25: Click on install



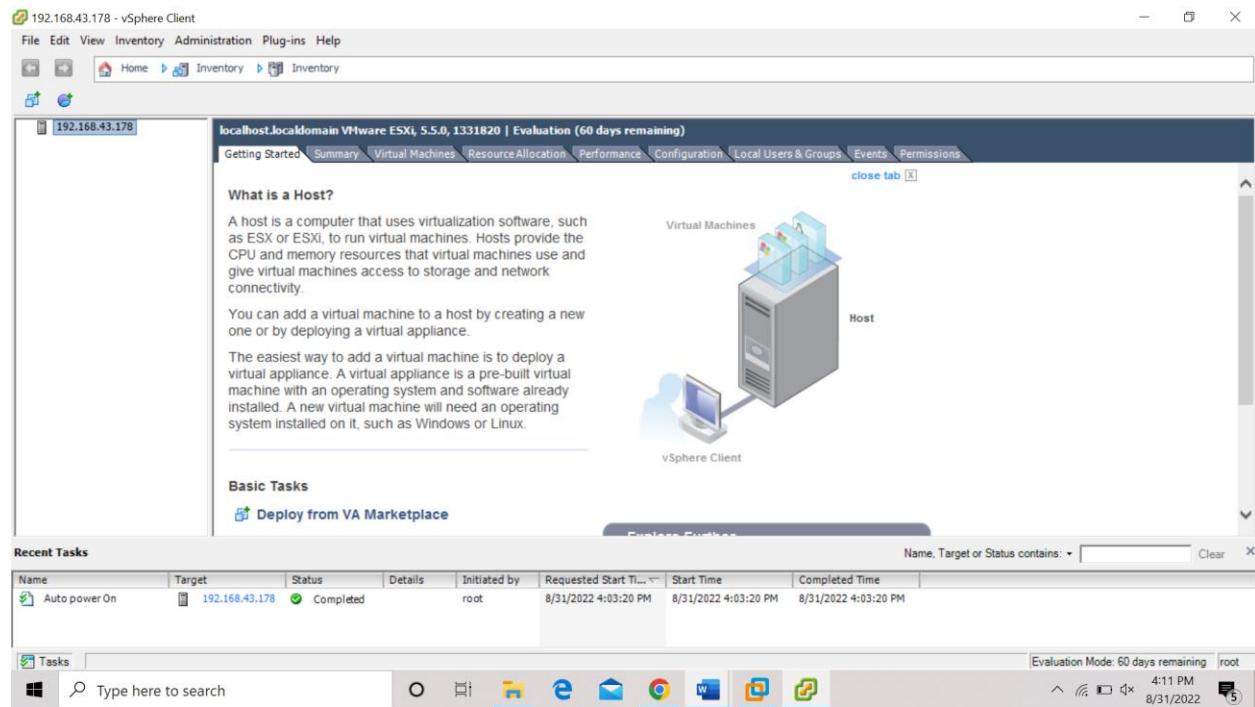
Step 26: Click on finish



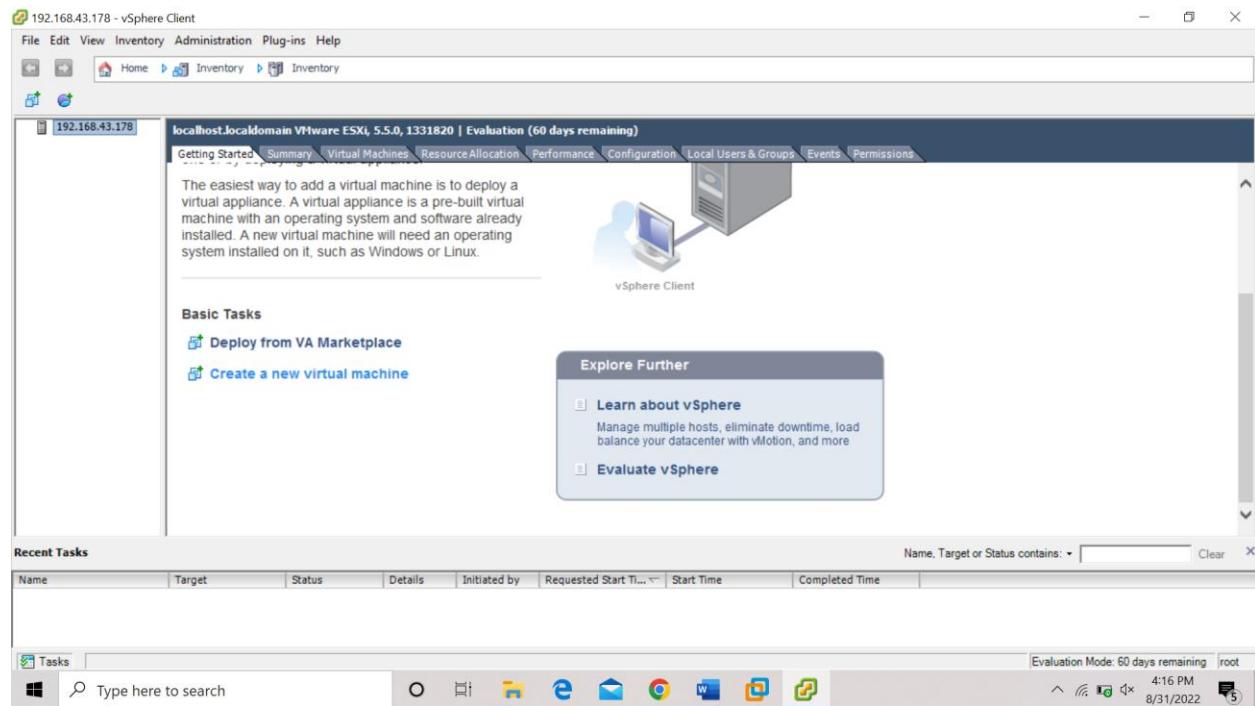
Step 27: After installation complete open client software enter IP address provided by Esxi server and username as root and password



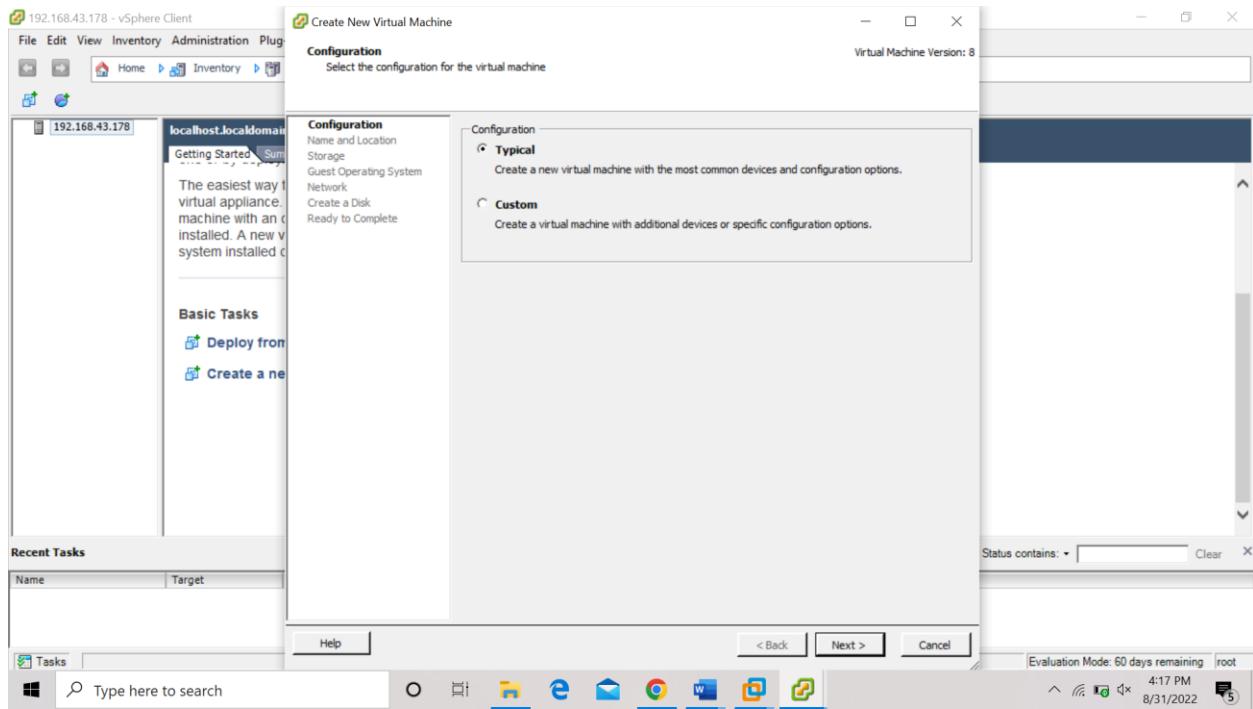
Step 28: After verifying root , ipaddress and password it display vsphere Client window



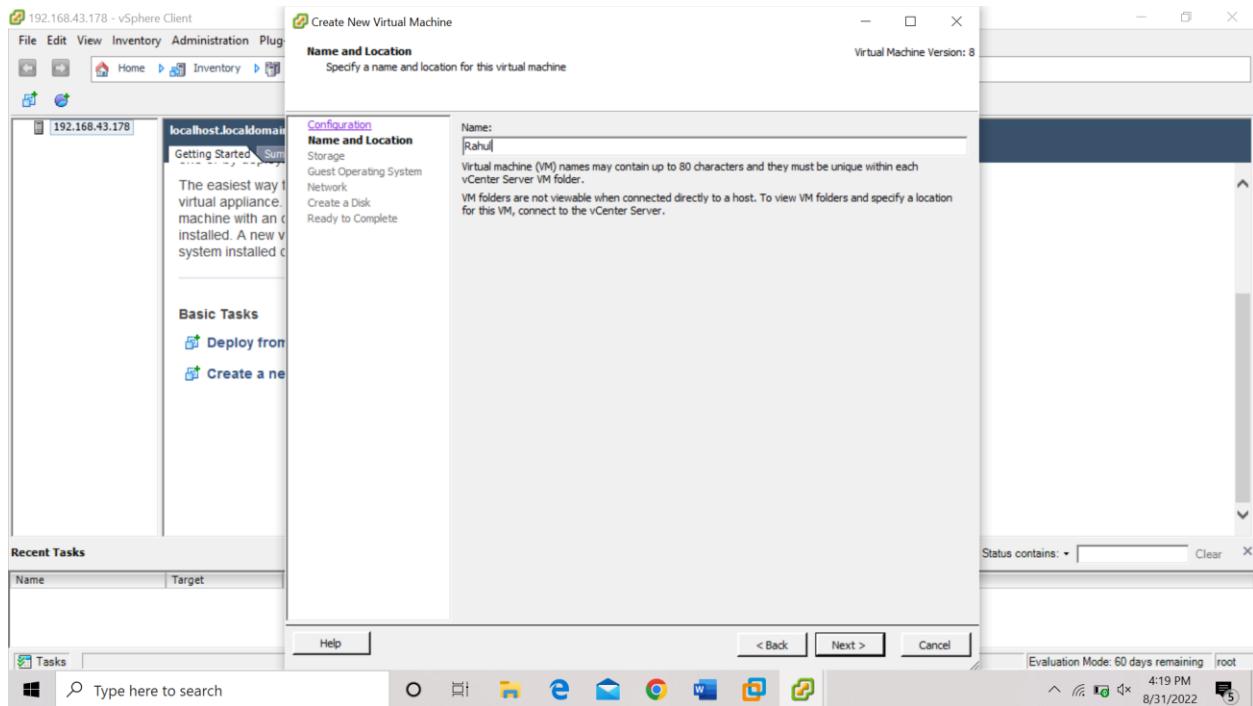
Step 29: scroll down little ,and create a new virtual machine



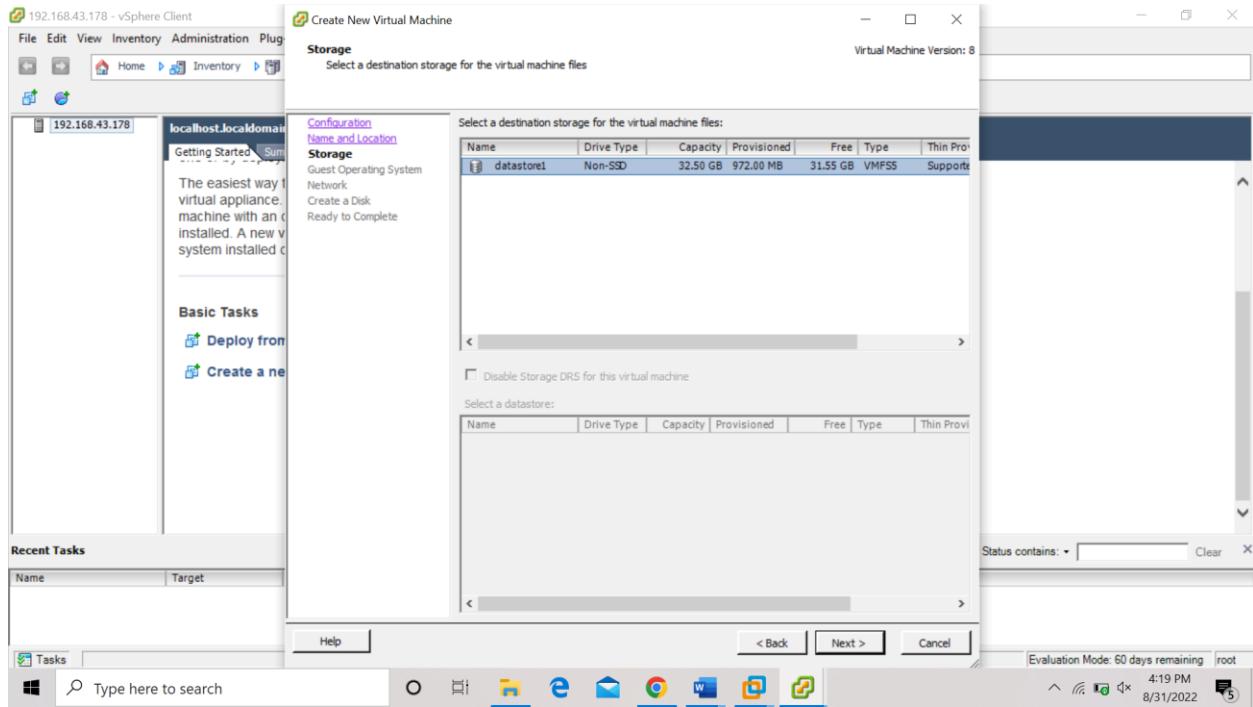
Step 30: typical selected ,and click on next.



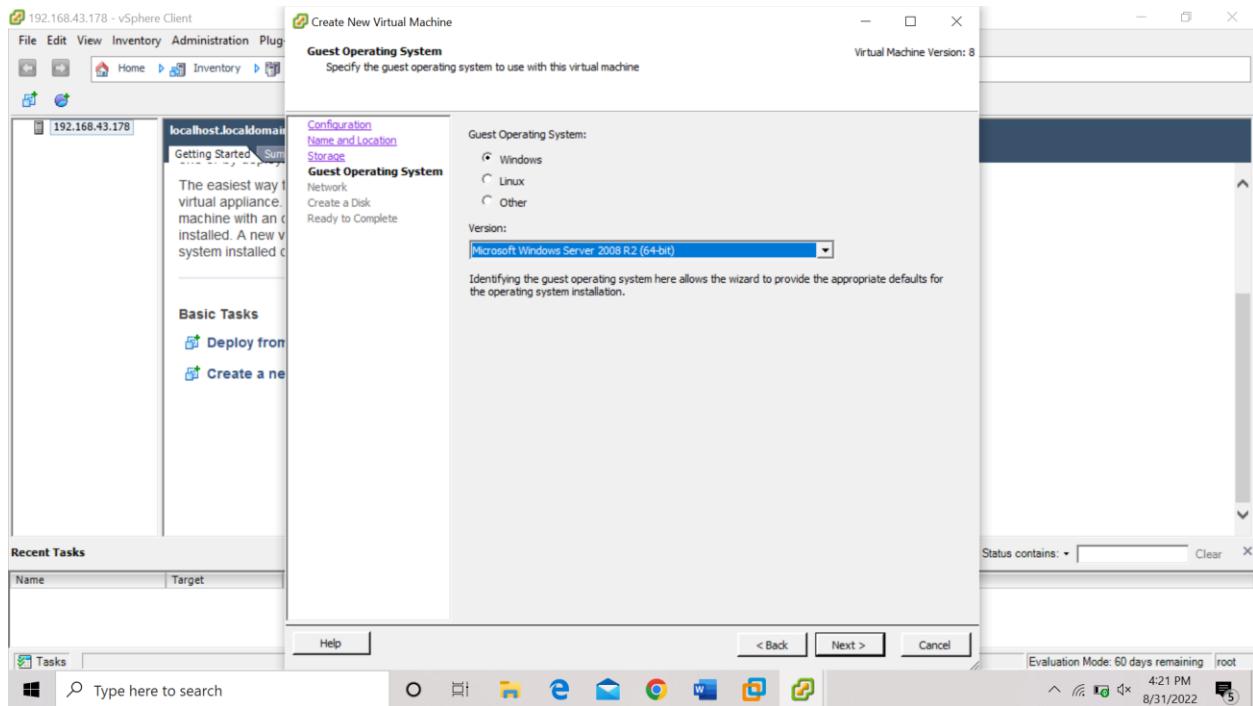
Step 31: put vm name



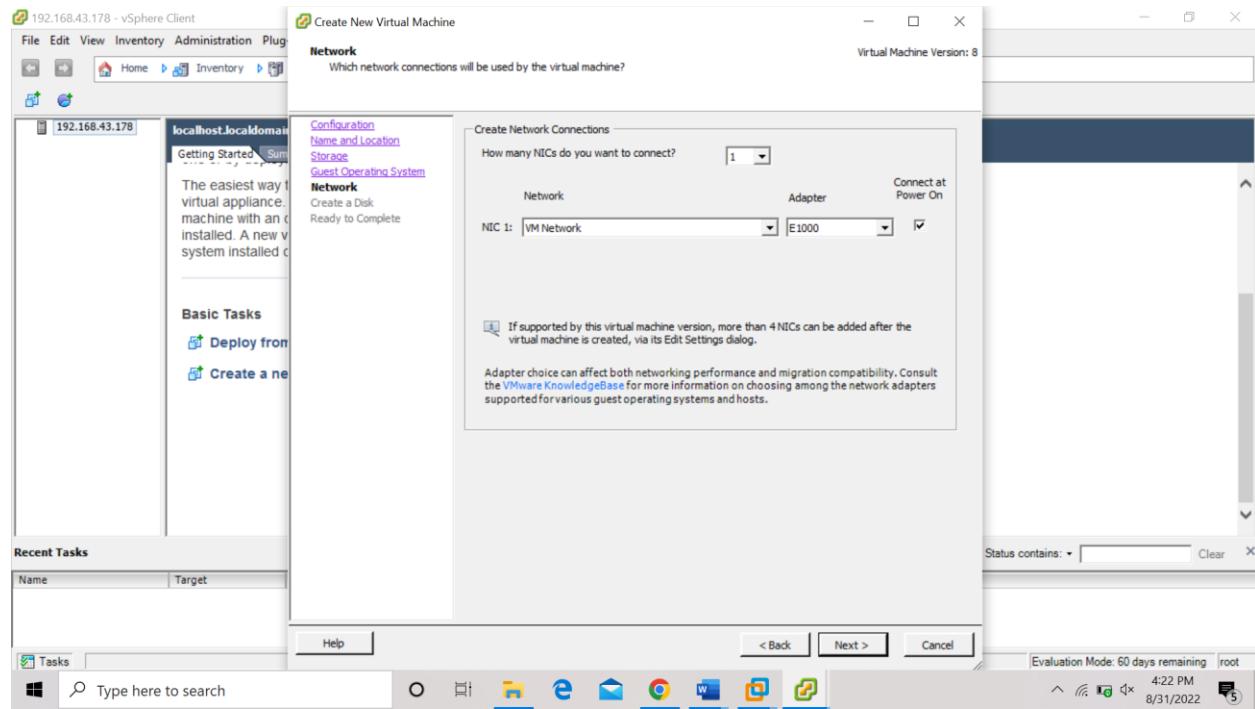
Step 32: Click on next



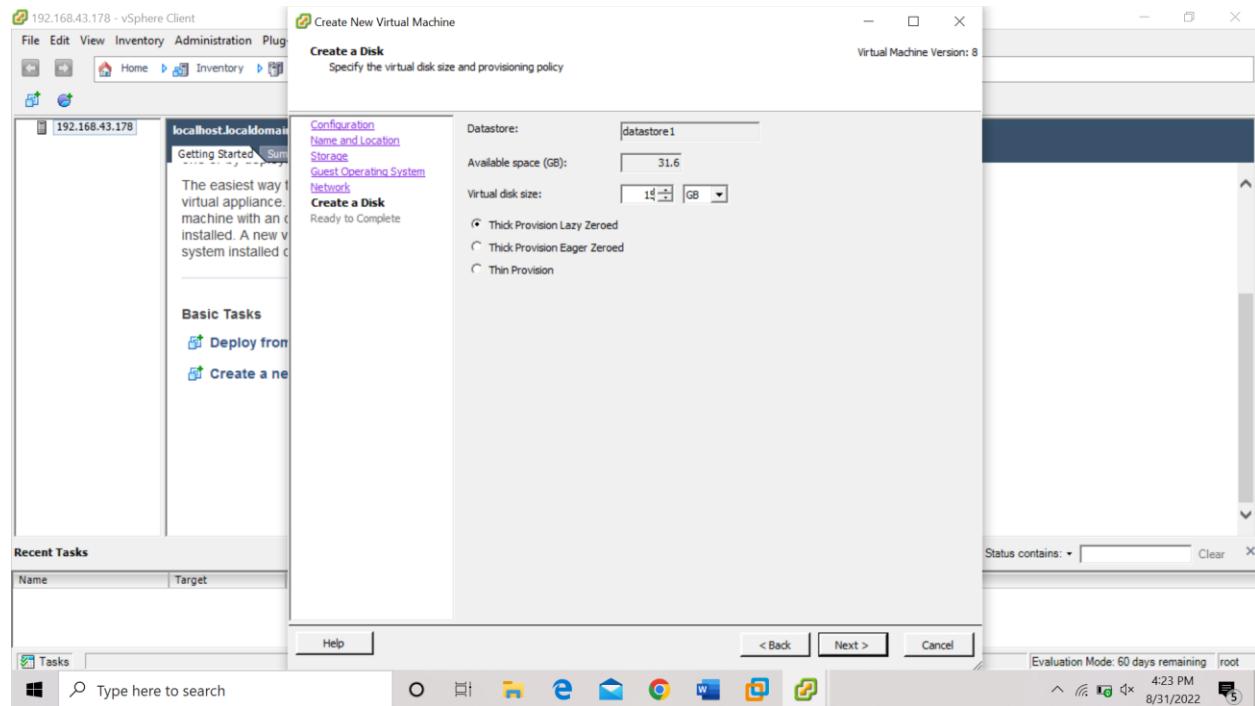
Step 33: default window selected ,click in next.



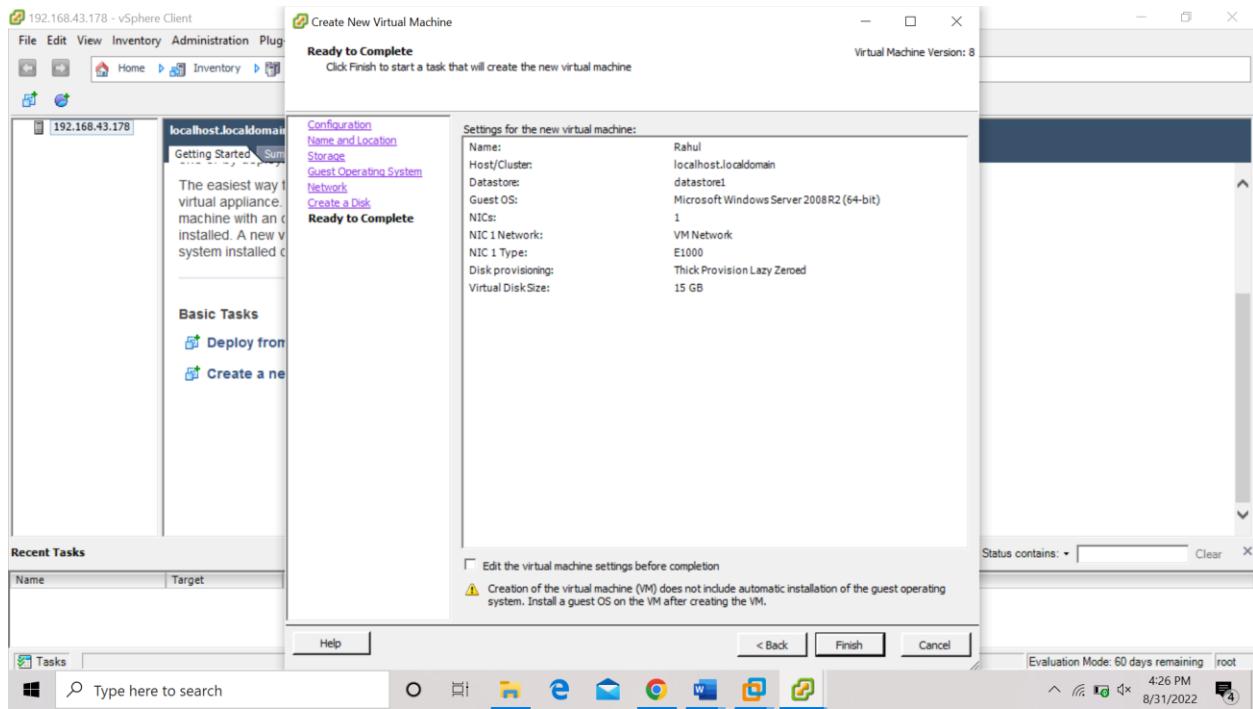
Step 34: Without changing anything click on next.



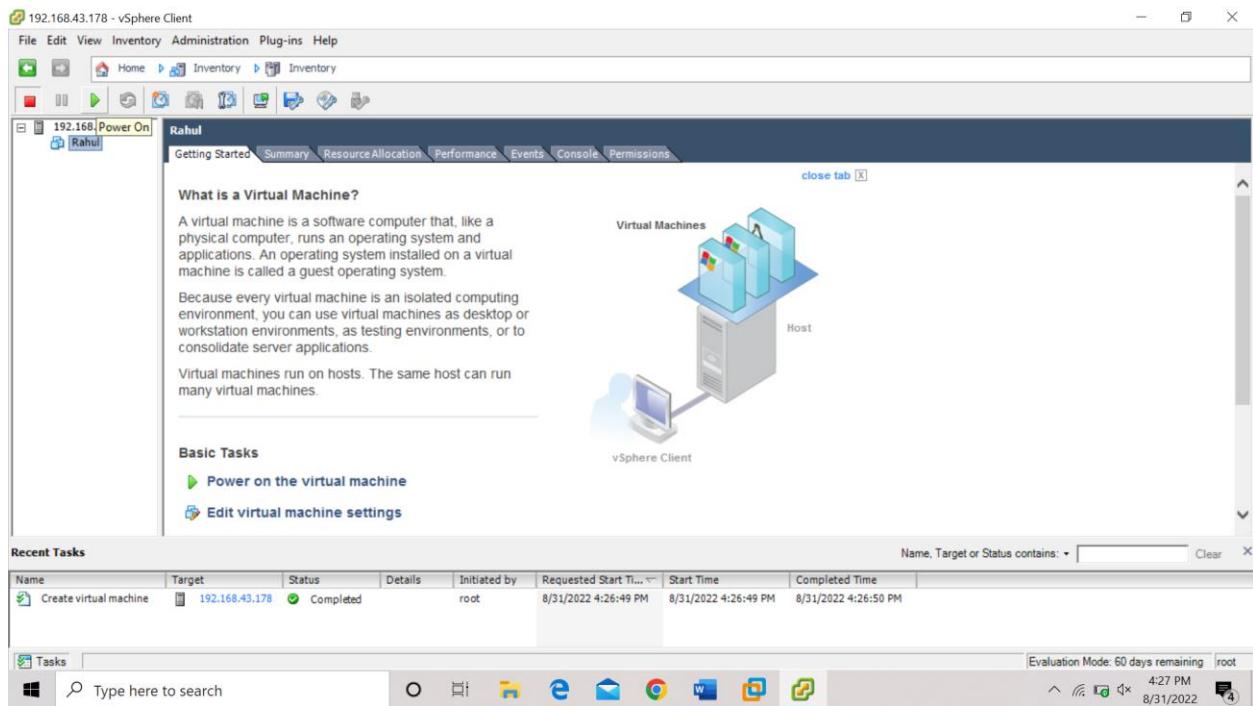
Step 35. Change the virtual disk size: 15GB



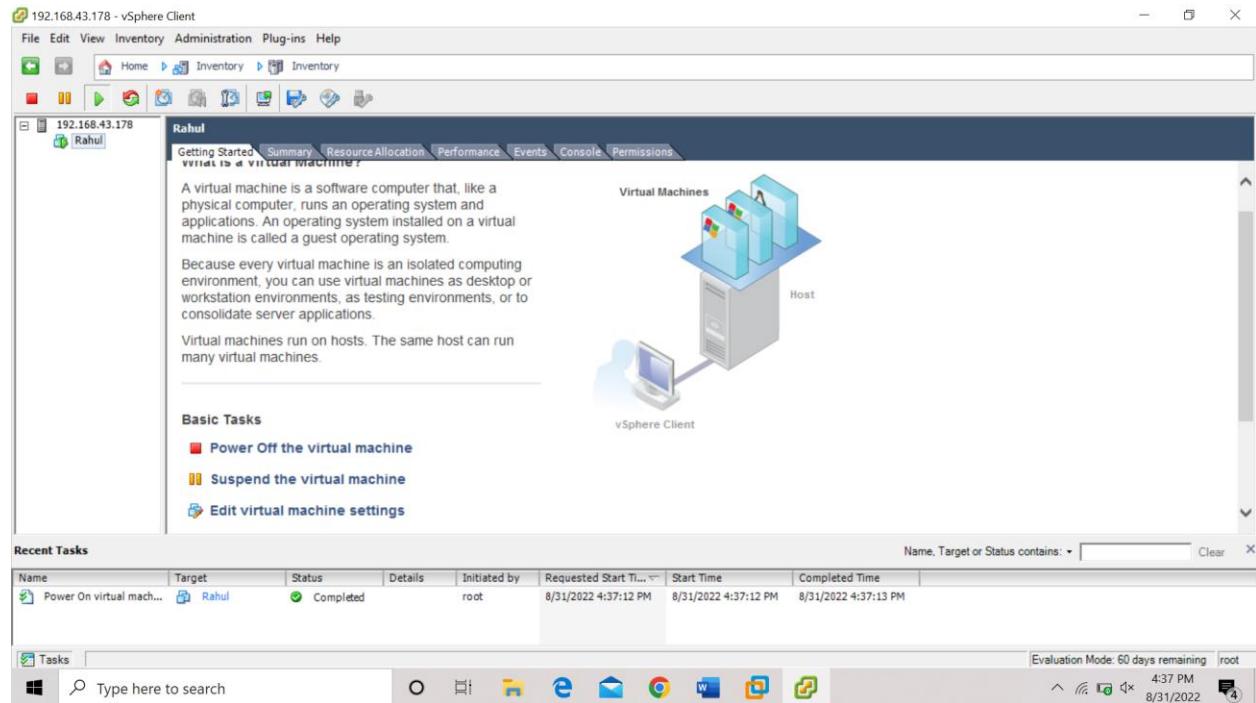
Step 36: vm info page will display



Step 37: select new vm than power on



Step 38: output of client

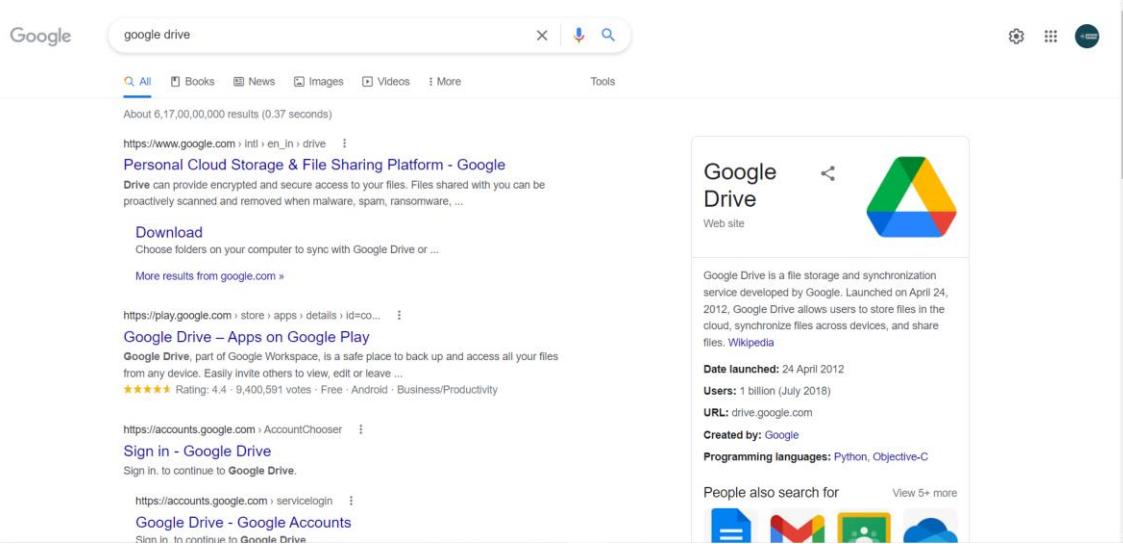


Practical 3

Steps:

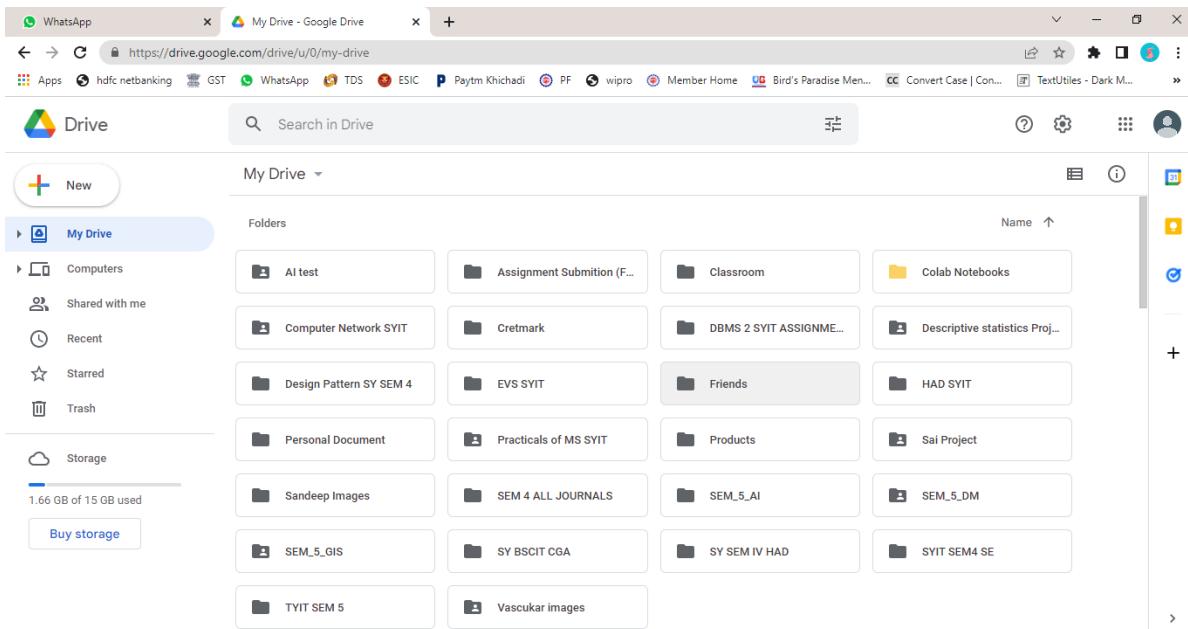
1. Login into your Google Account

Go to <https://drive.google.com/> -> Click 'Go to Drive':



This will take you to the Login page -> Now enter the credentials of your Google account and sign-in

2. This will take you to your drive folder -> This will allow you to create documents as well as store and edit them



3. Adding files

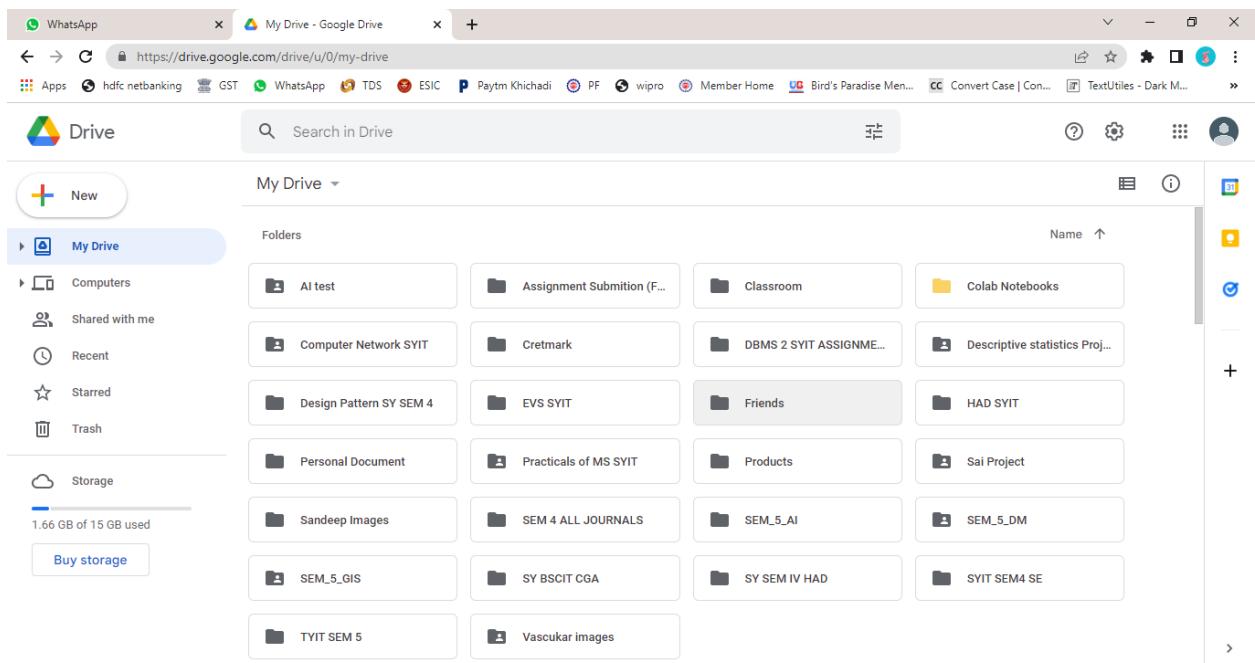
You can either create a new file or upload files from your computer -> To create a new file right-click the folder view and select the type of file -> To upload files just drag and drop them into the folder view



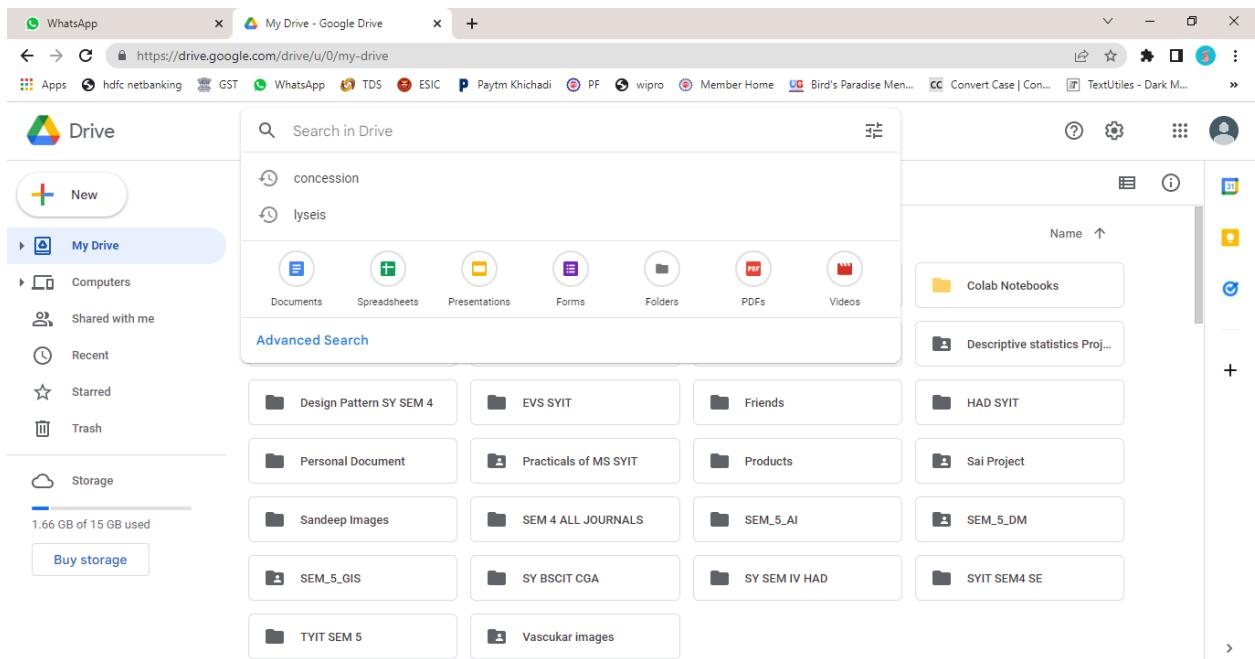
4. Navigating through Drive

You can use the navigation bar on the left side:

- ‘My Drive’ contains all the folders and files in your account
- ‘Computers’ allows you to access all the computers synced with your drive account
- ‘Shared with me’ lists all the files and folders that others have shared with you • ‘Recent’ list all the files you have added, modified or accessed recently
- ‘Starred’ shows all the files you have starred (marked as important)
- ‘Bin’ contains all the files you have recently deleted where you can restore them
- ‘Storage’ section shows you your remaining storage and gives you the option to buy more

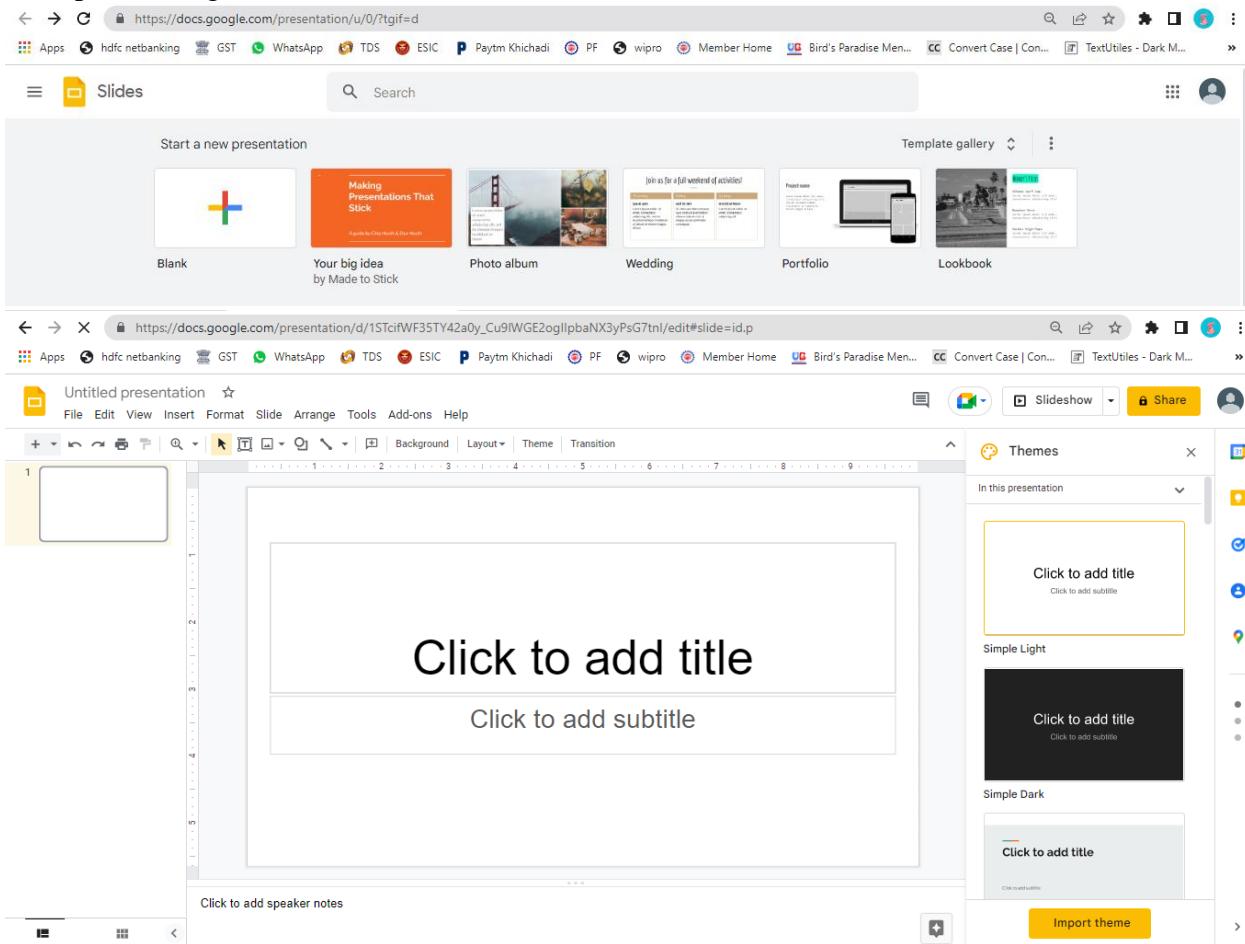


5. You can also use the search bar to search for files by their name or owner or type of file -> If a file or files exists they will be listed -> Click them to access them:

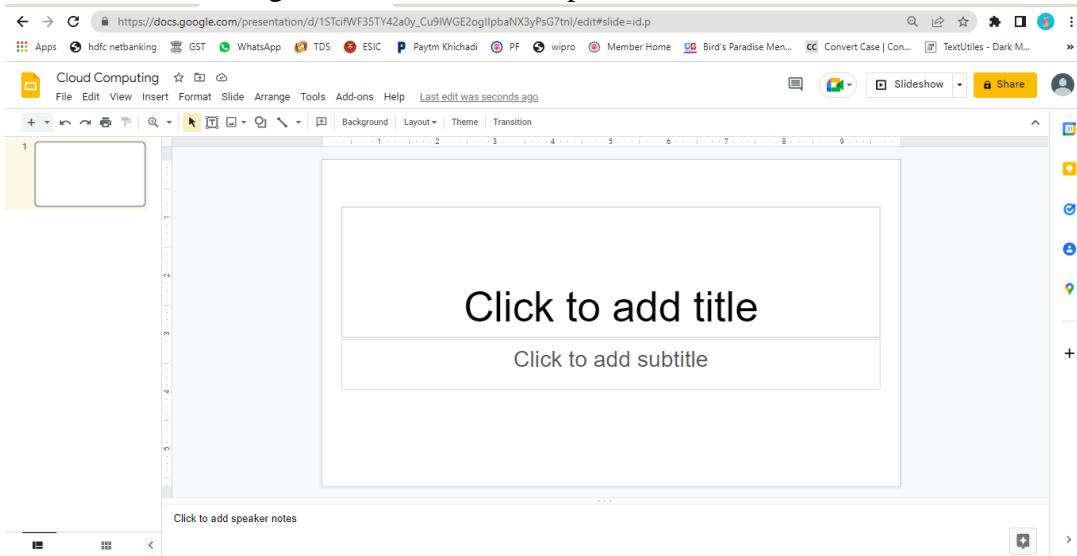


Using Google slides

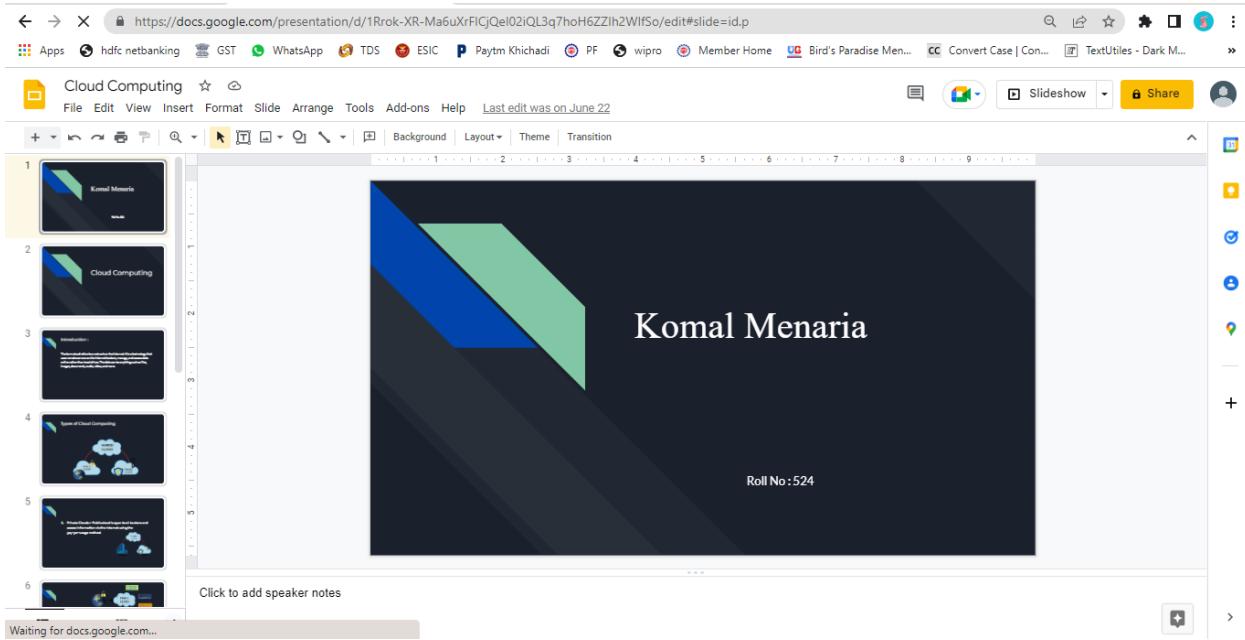
6. Click the + New button -> Select Google Slides -> This will create a new blank presentation and open a Google Slides tab:



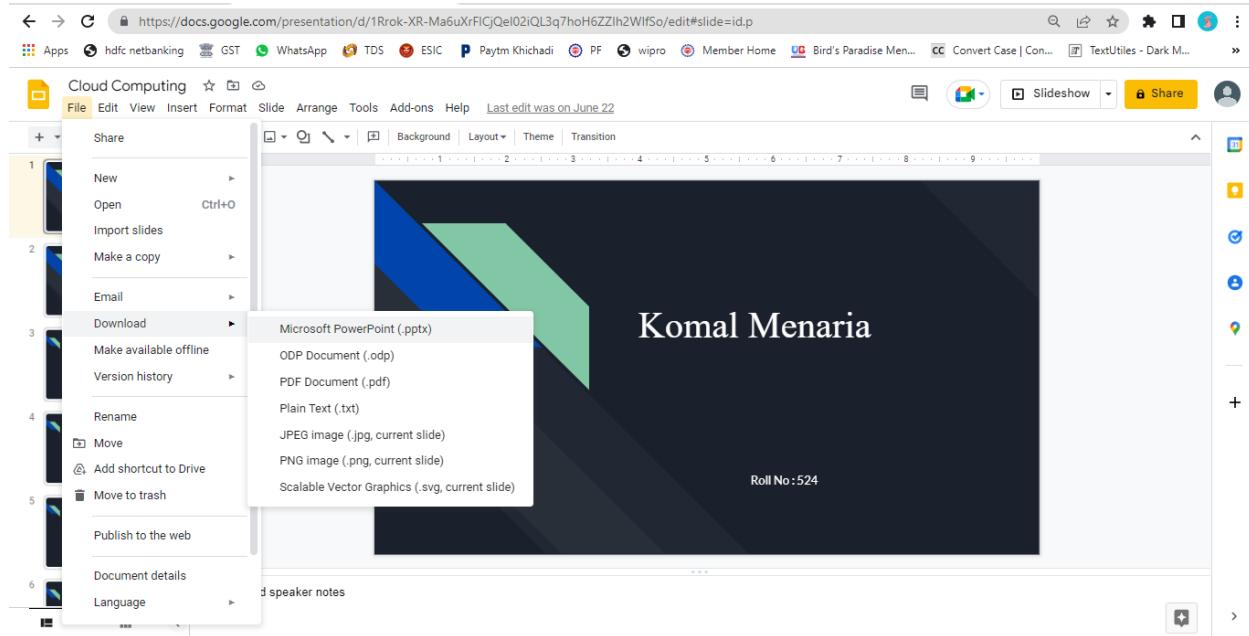
7. Rename the file using the text field in the top left:



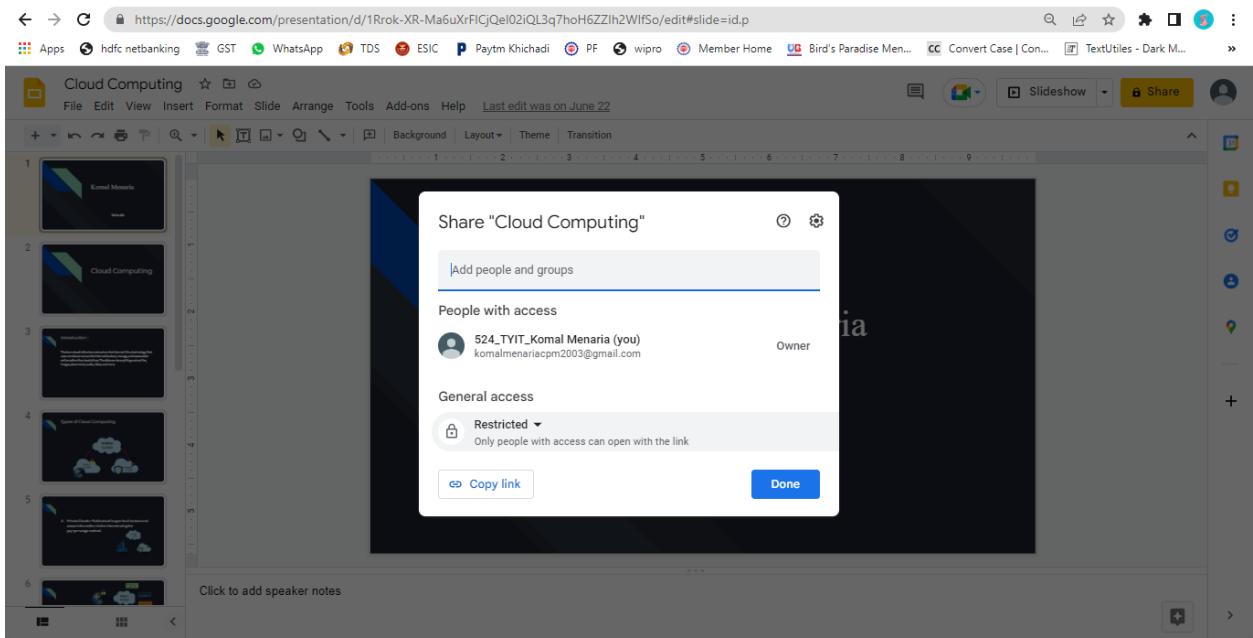
Customize and create new slides and add the desired content



8. To export and convert the presentation click File -> Download -> Microsoft PowerPoint -> This will download your presentation as a .pptx file:



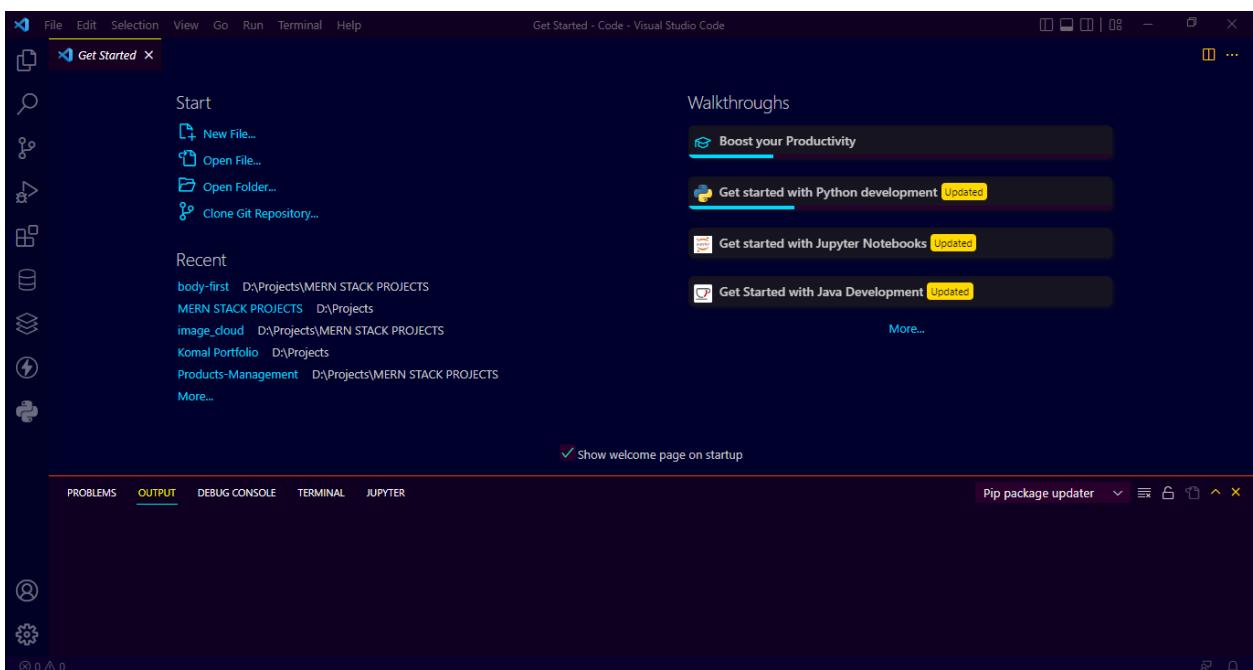
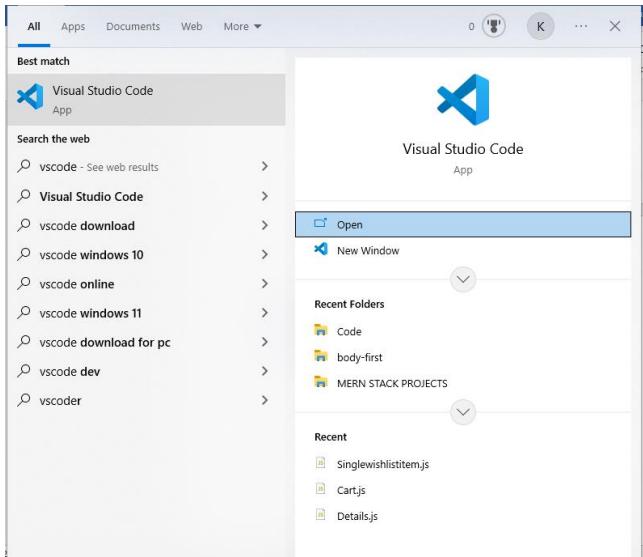
9. To share the presentation, click File -> Share -> Configure the options: Getting the link and setting the permissions



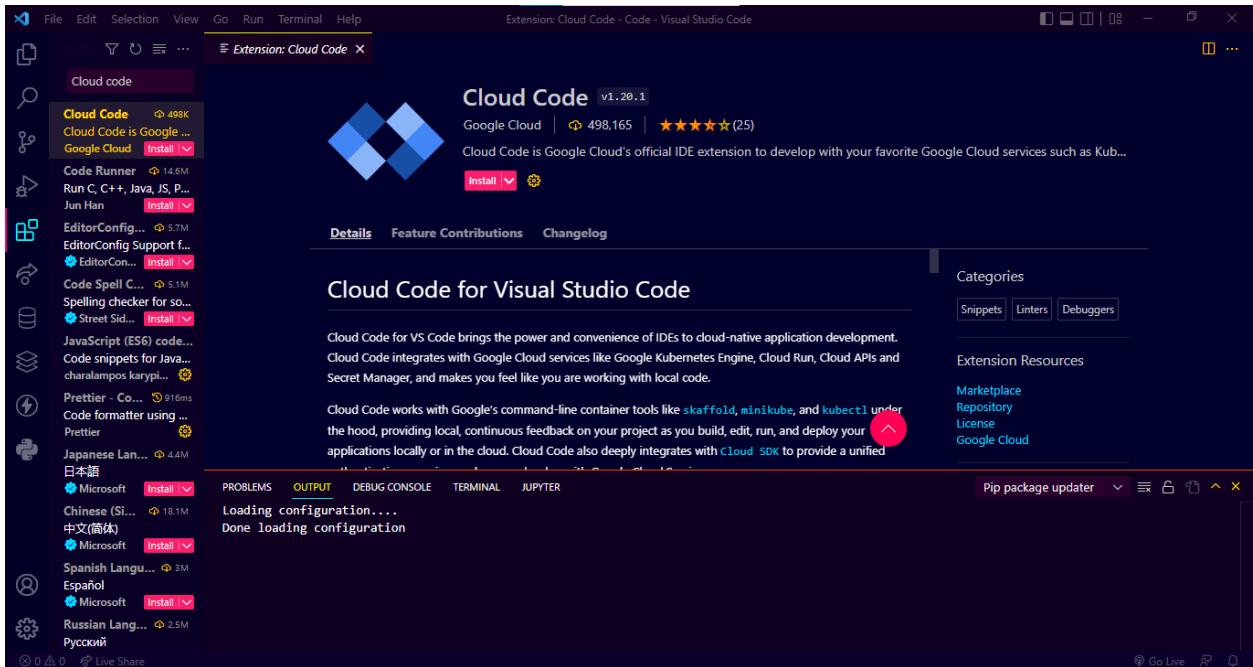
Practical 4

Steps:

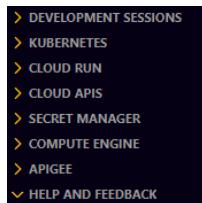
1. Open VScode.



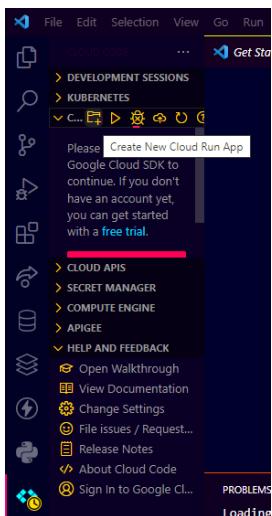
2. Search for Cloud code in the extensions section and install it.



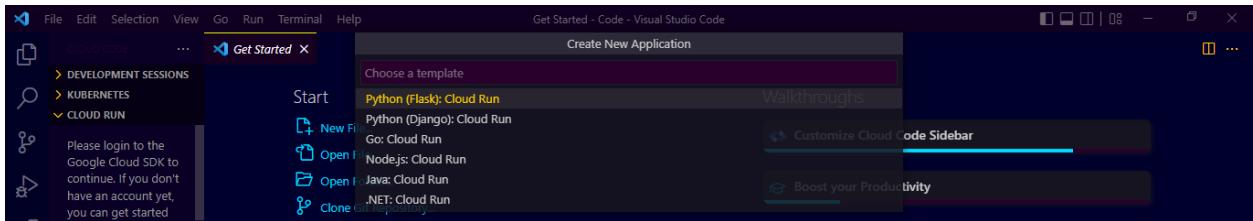
3. Now create a service, from the Cloud code status bar, select New Application.



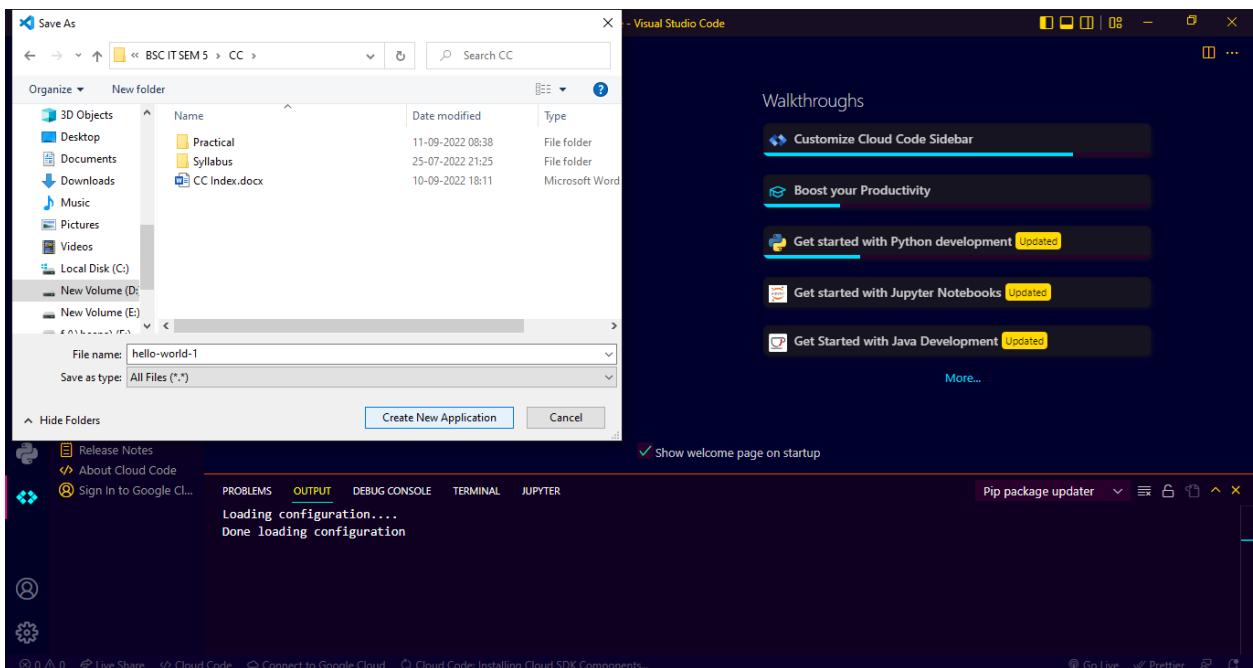
4. From here select cloud run application.



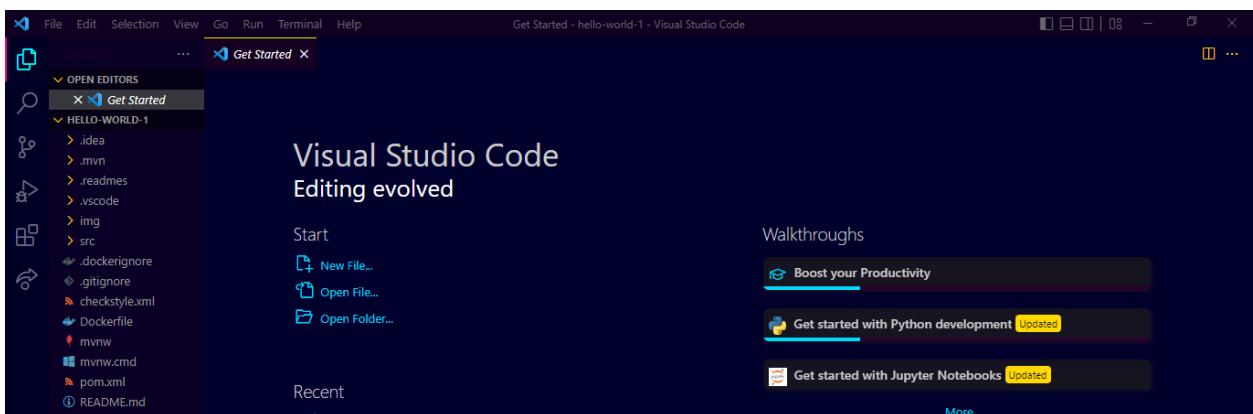
5. Now select java.



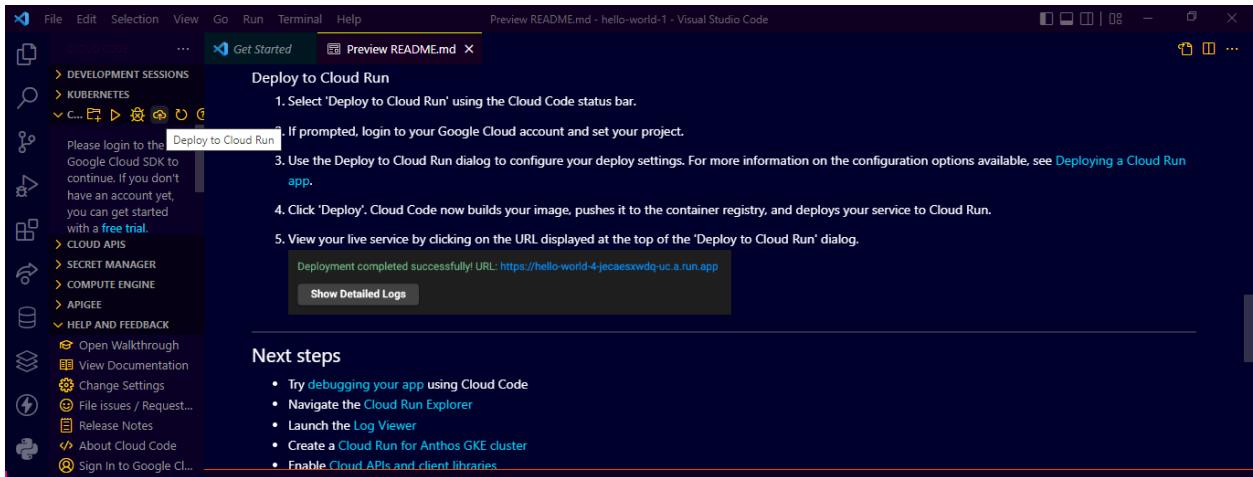
6. Now create the hello-world-1 application in the desired directory.



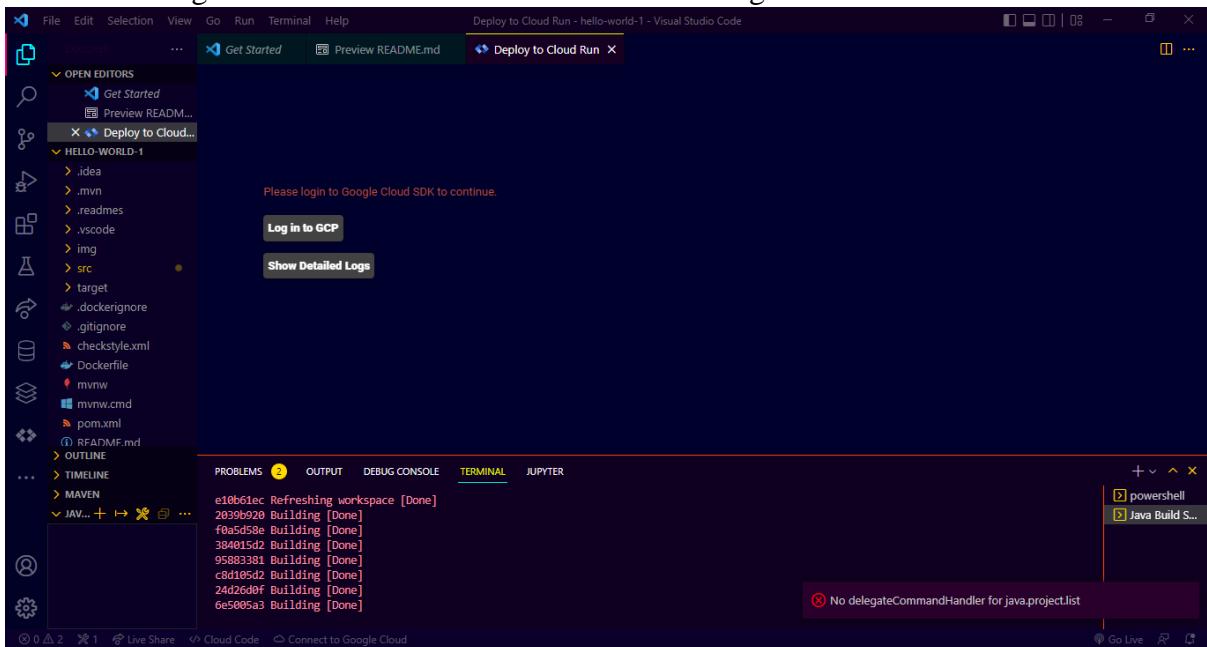
7. Now the project directory will open in vs code.



8. Click on deploy to cloud run.



9. Since no billing account is created can conclude at this stage.



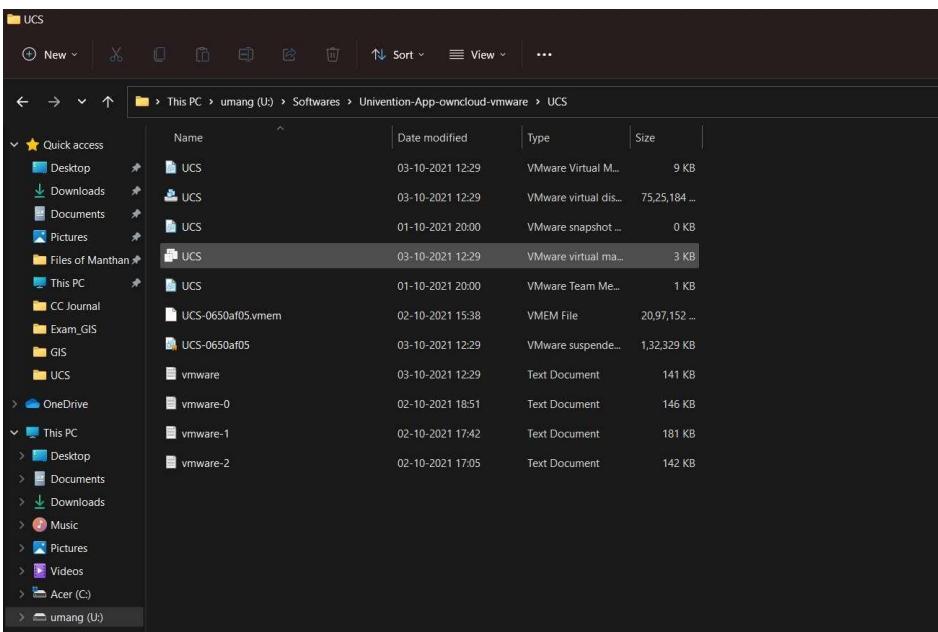
Practical 5

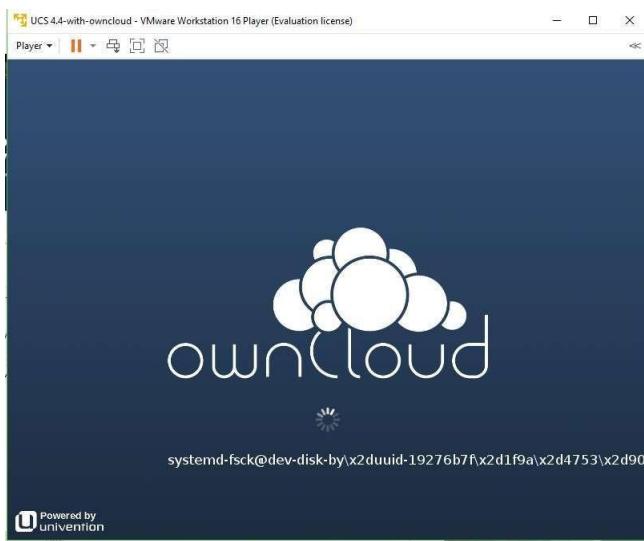
Steps:

1. Go to <https://owncloud.com/download-server/> → Appliance section → click VMWare → Extract the downloaded .zip file:

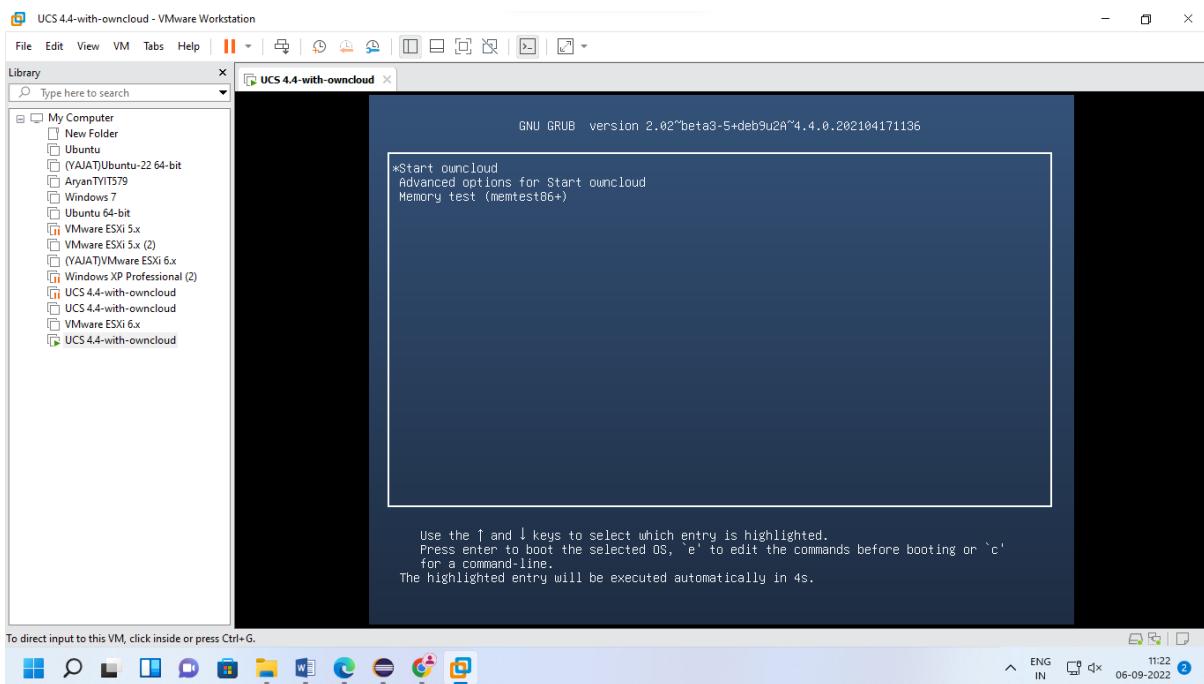
The screenshot shows the ownCloud website with the URL <https://owncloud.com/download-server/> in the address bar. The page title is "Download Server Packages - ownCloud". The main content area is titled "Appliance". It describes the appliance as the easiest way to get ownCloud up and running, built on UCS ("Univention Corporate Server") and fully set up with a secure connection and the ownCloud Proxy app. It offers download links for ESX, Virtual Box, QCOW 2, and VMWare. Below this is a "Documentation >" link. A sidebar on the left shows a navigation tree with categories like "Quick access", "Desktop", "Downloads", "Documents", "Pictures", "Files of Manthan", "This PC", "CC Journal", "Exam_GIS", "GIS", "UCS", "OneDrive", and "This PC" again. A "UCS" folder is selected in the tree.

2. Now Double click the application. It will directly take you to the VMware

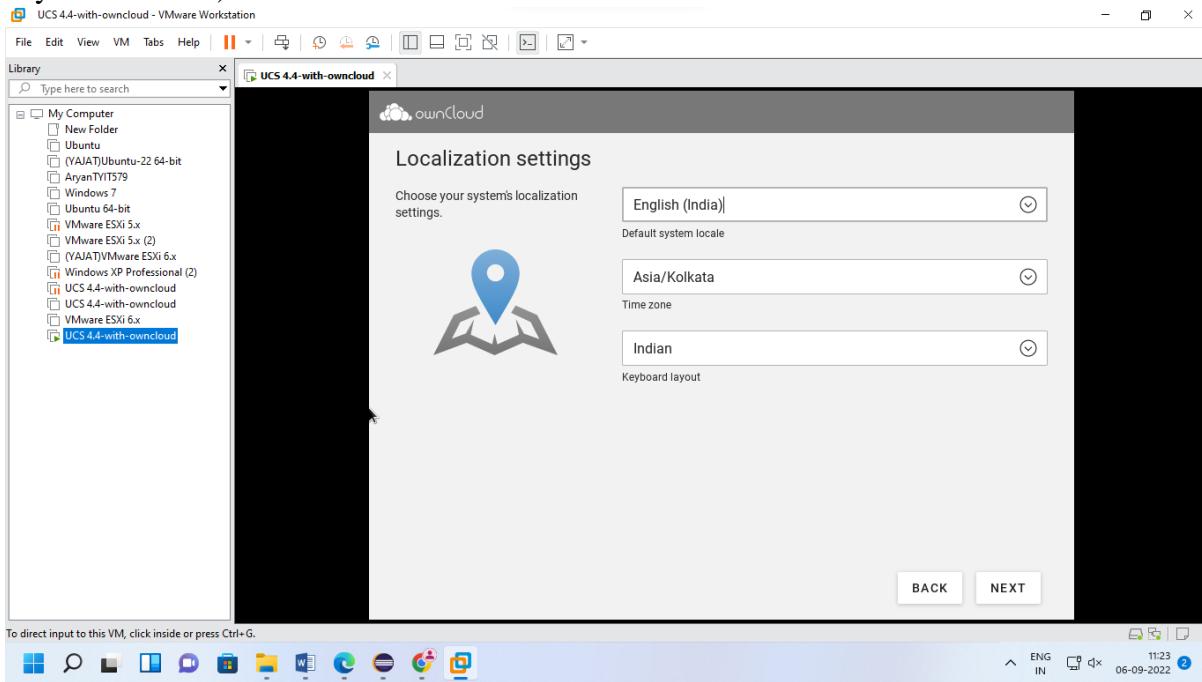




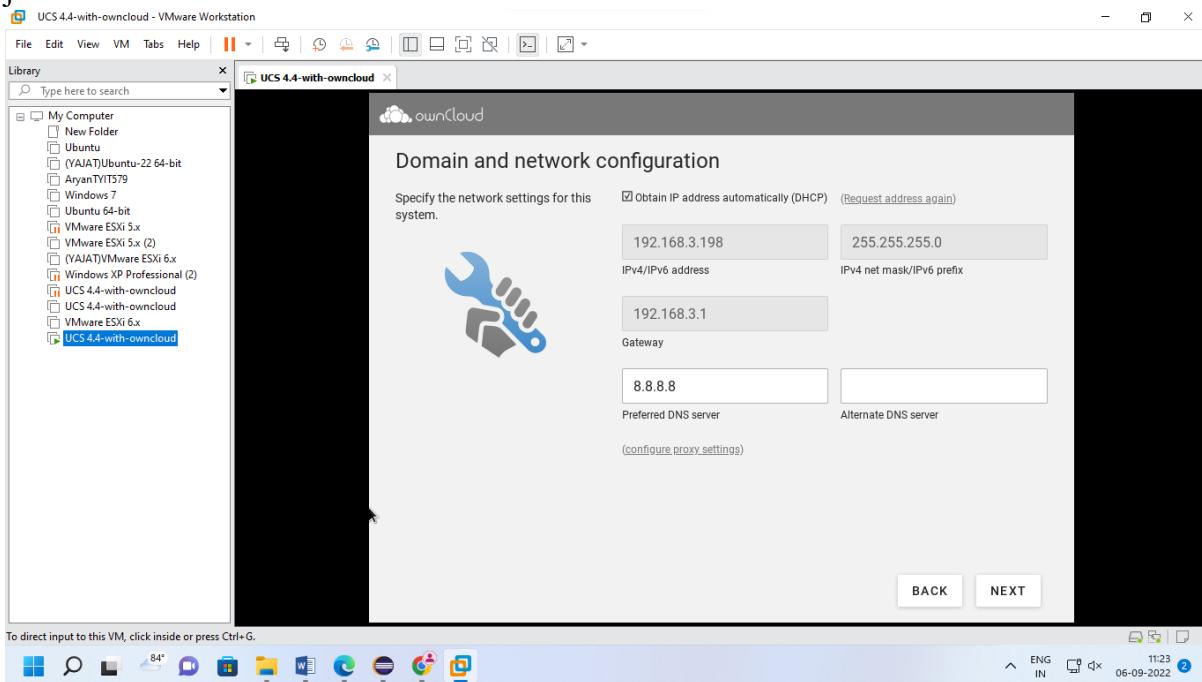
3. Click on "Power on this virtual machine" and following window will appear.



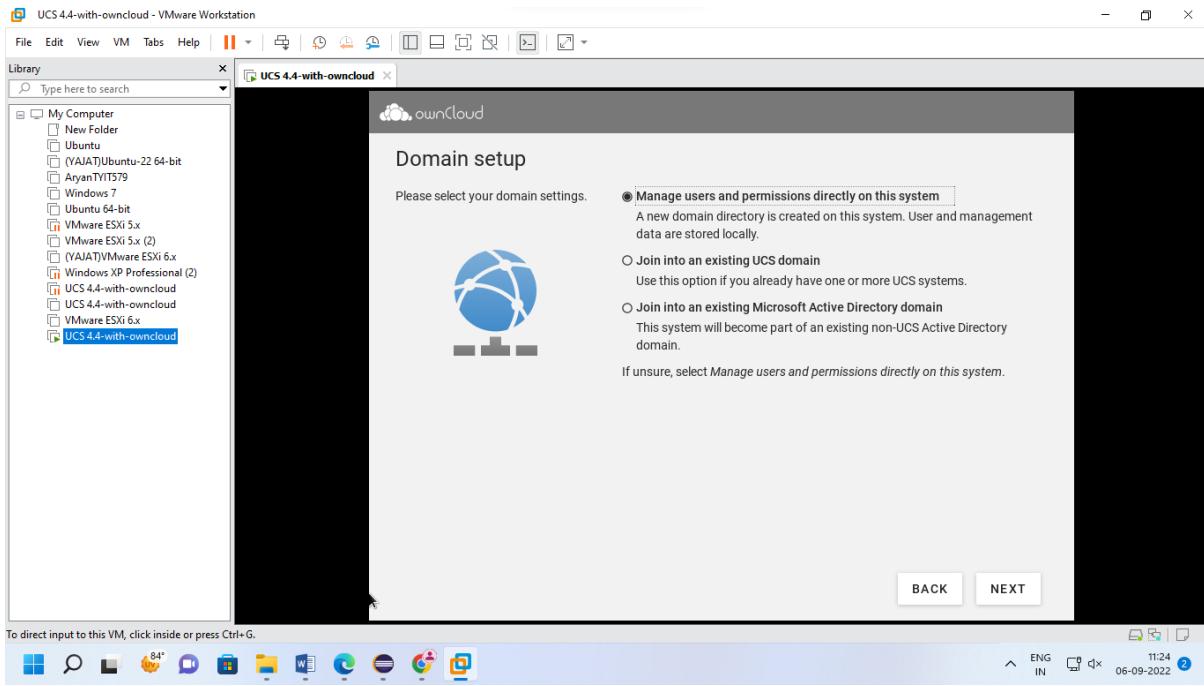
4. On next window it will ask you for your “city”, don’t enter any city name in it and just click “NEXT” (Most important step please don’t enter any city name in it otherwise it will not read keyboard entries).



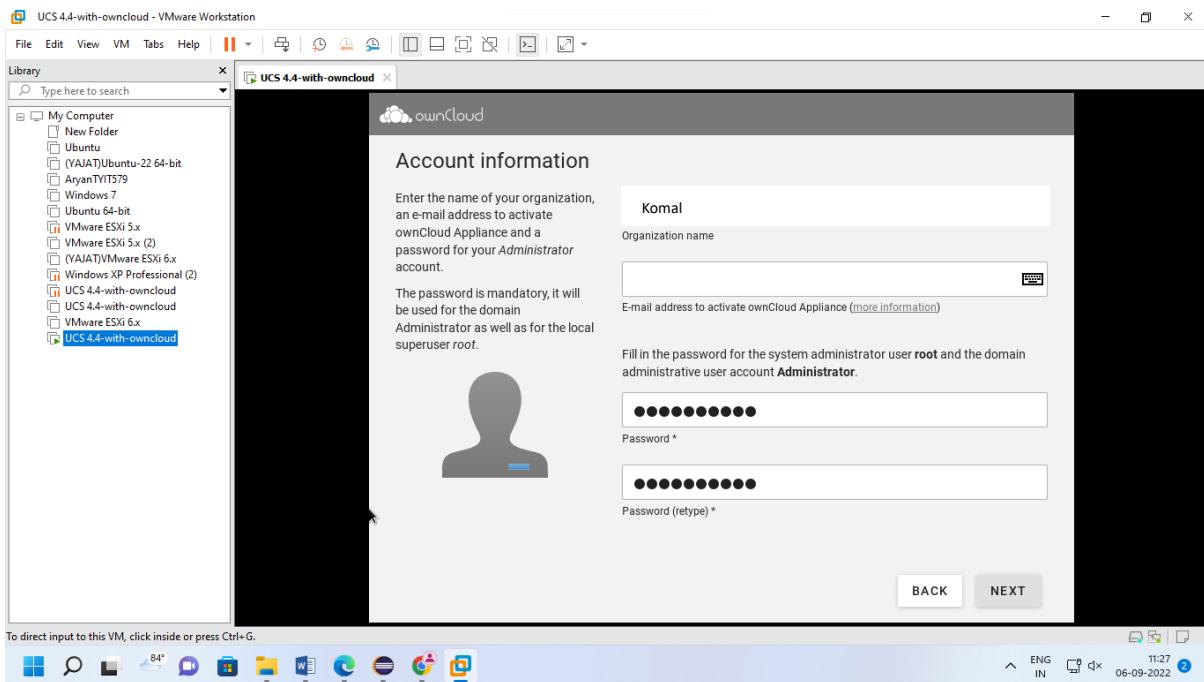
5. It will fetch IP Address, Net Mask and Gateway from DHCP, don’t change anything, also uncheck “Obtain IP address automatically (DHCP)”, mention an “Alternate DNS Server” and just click “NEXT”.



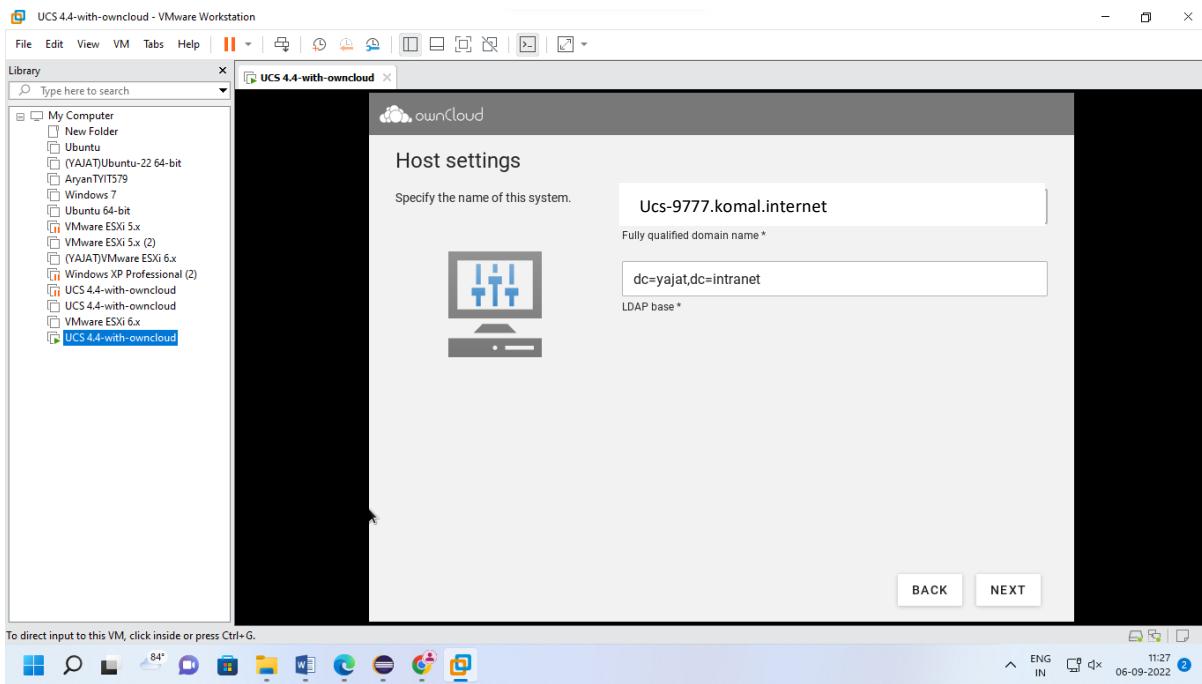
6. In Domain setup click “NEXT”



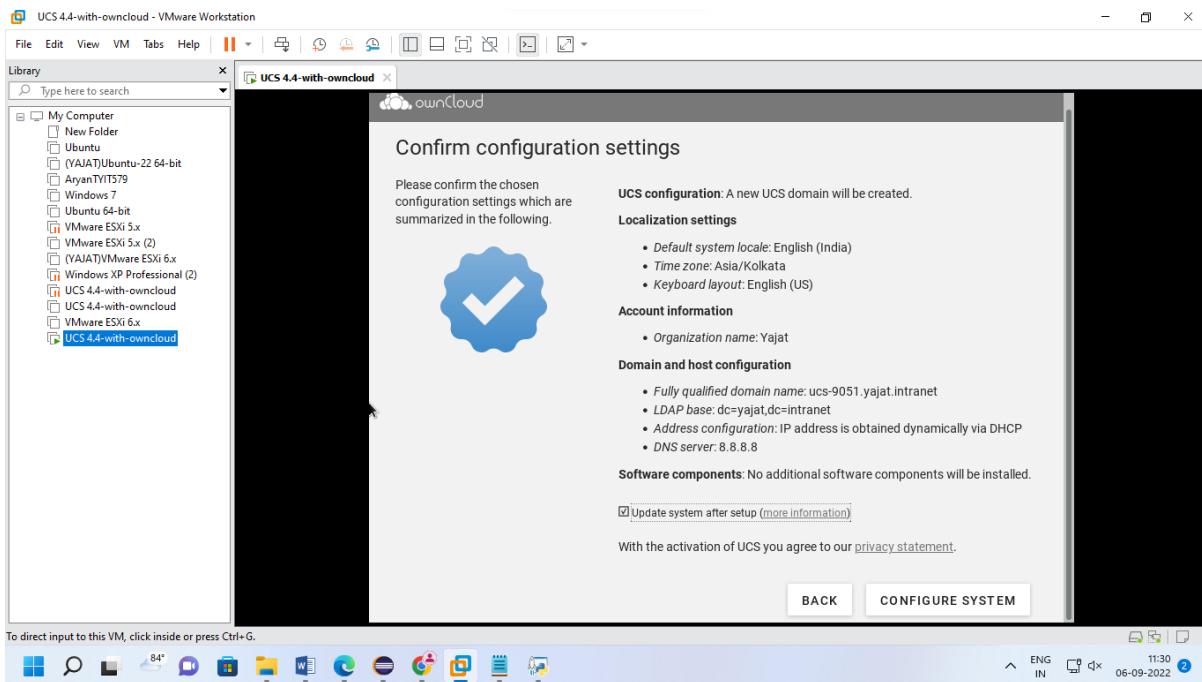
7. Now Account information window will appear, enter details in it. Remember that password we are setting is for “root” and “Administrator”, click on “NEXT”



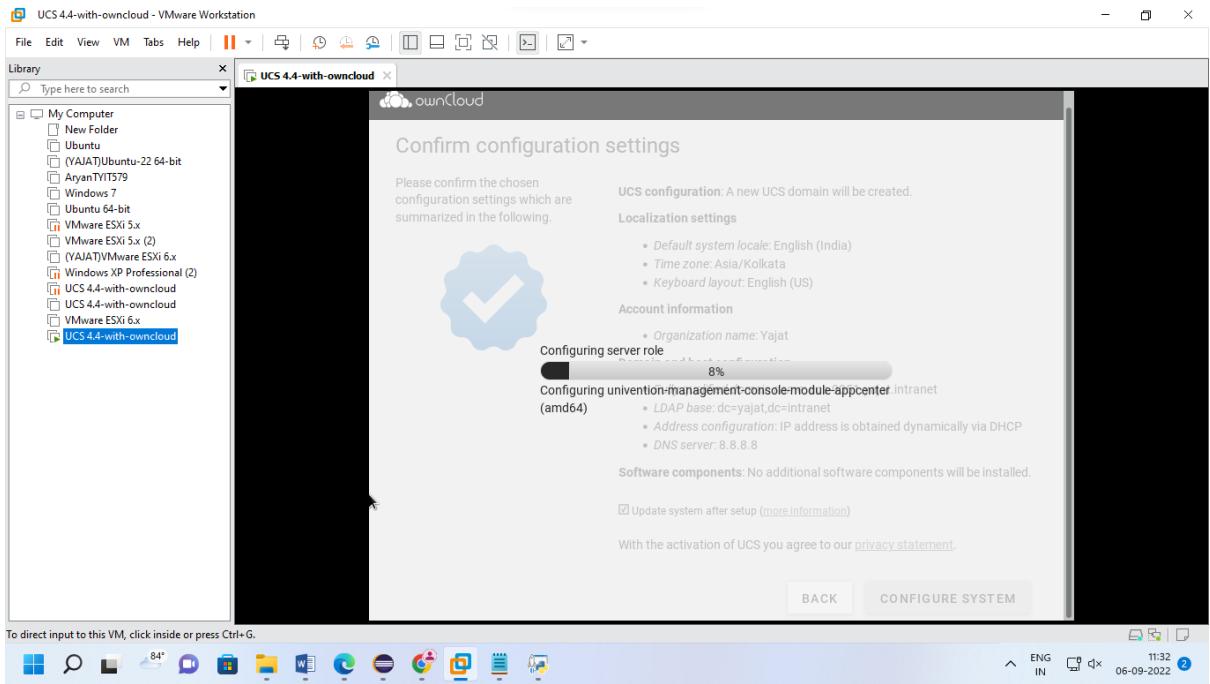
8. On next window it will show you Fully Qualified domain name and LDAP base, click on “NEXT”.



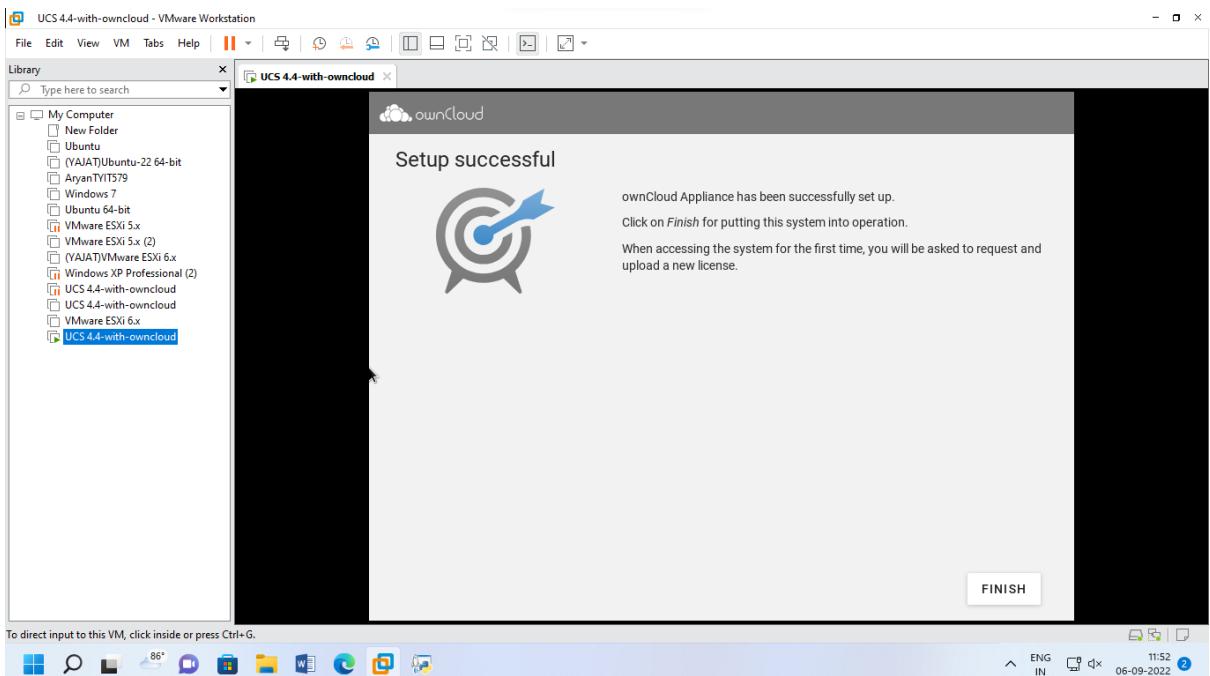
9. It will show the configuration settings for own cloud scroll down a little and click on “CONFIGURE”.



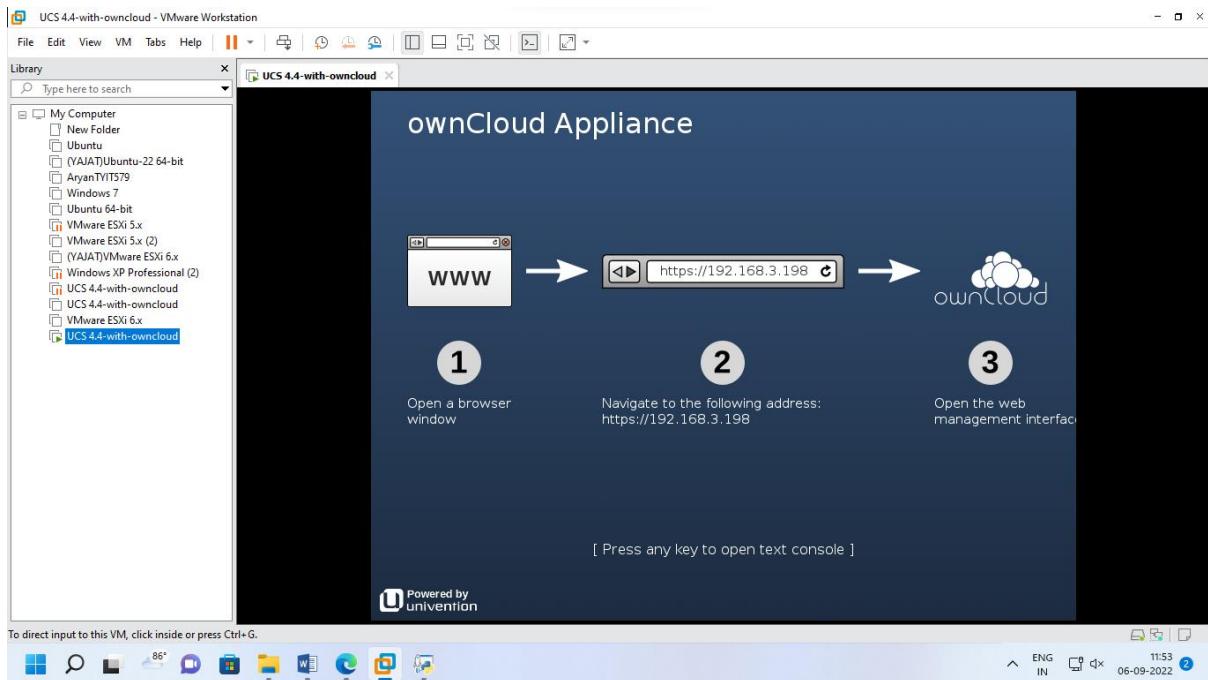
10. It will take time to setup.



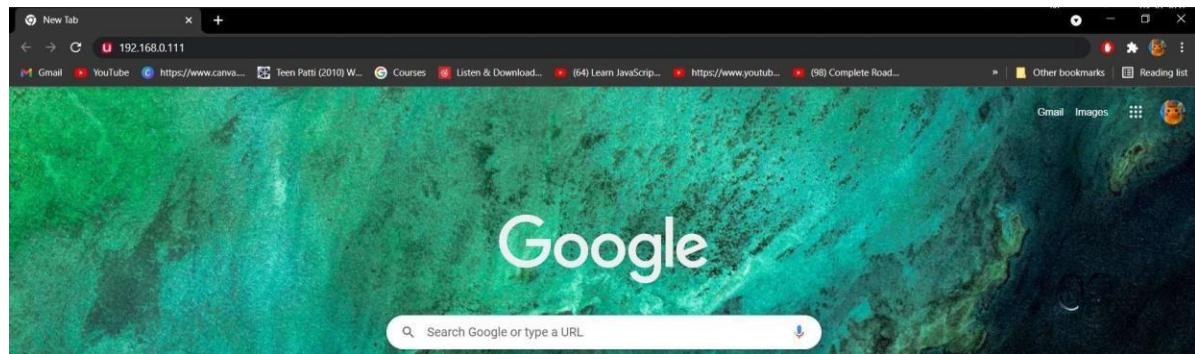
11. The setup is done now click on “FINISH”.



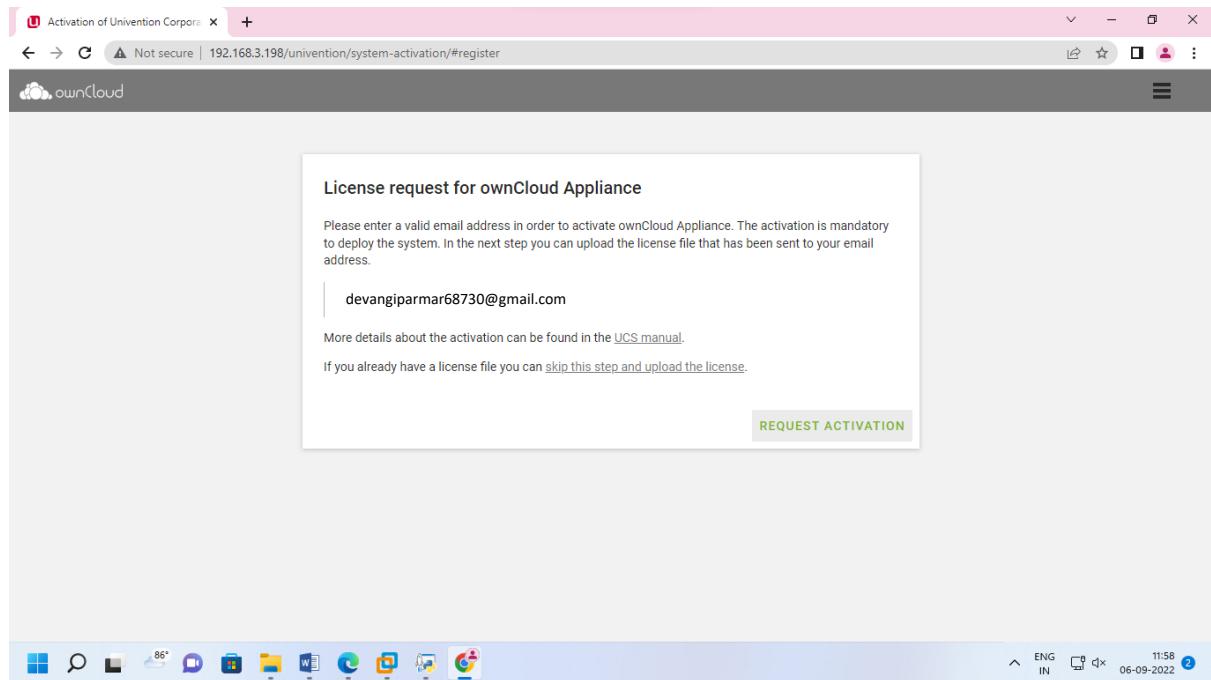
12. Now on next window press any button.



13. Step 14: Now you can see the IP address on top right-hand side, open the browser and enter system's IP address in URL bar and press enter



14. It will ask you for Email ID to send license, enter your Email ID and click “REQUEST ACTIVATION”

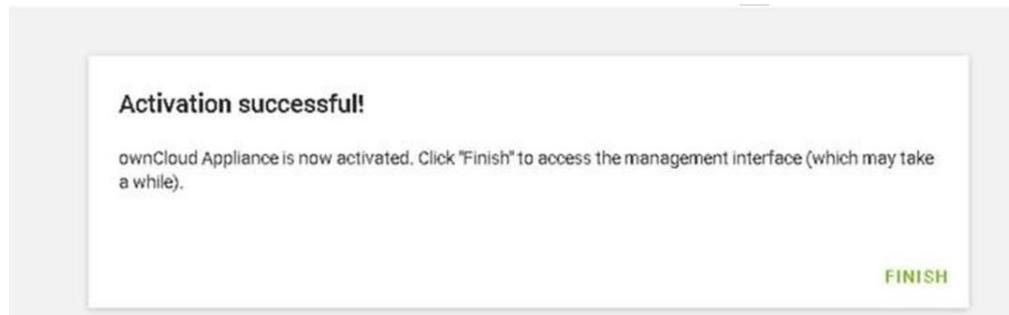


15. Check your mailbox you will receive the license from OwnCloud, download it

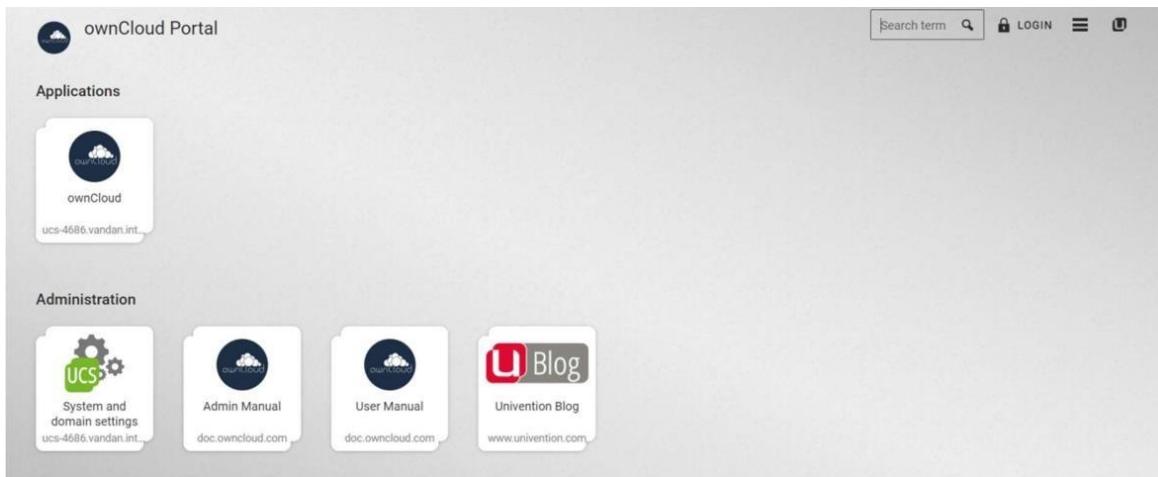
16. Get back to OwnCloud and click on “UPLOAD LICENSE FILE”

17. Now select the license file and click “Open”.

18. On next page click on “FINISH”.



19. We have installed OwnCloud, now just try logging in with “Administrator” as userfor that click on “LOGIN” button.



20. Enter “Administrator” as user name and the password which you set during setting up process and click on “LOGIN”.



21. After we have logged in successfully, now click on hamburger menu button.



22. Now we successfully completed OwnCloud installation.

Practical 6

Components of Eucalyptus:

- Cloud Controller (CLC):

It is a Java program that offers EC2-compatible interfaces, as well as a web interface to the outside world. In addition to handling incoming requests, the CLC acts as the administrative interface for cloud management and performs high-level resource scheduling and system accounting. The CLC accepts user API requests from command-line interfaces like euca2ools or GUI-based tools like the Eucalyptus User Console and manages the underlying compute, storage, and network resources. Only one CLC can exist per cloud and it handles authentication, accounting, reporting, and quota management.

- Walrus:

It is also written in Java, is the Eucalyptus equivalent to AWS Simple Storage Service (S3). Walrus offers persistent storage to all of the virtual machines in the Eucalyptus cloud and can be used as a simple HTTP put/get storage as a service solution. There are no data type restrictions for Walrus, and it can contain images (i.e., the building blocks used to launch virtual machines), volume snapshots (i.e., point-in-time copies), and application data. Only one Walrus can exist per cloud.

- Cluster Controller (CC):

It is written in C and acts as the front end for a cluster within a Eucalyptus cloud and communicates with the Storage Controller and Node Controller. It manages instance (i.e., virtual machines) execution and Service Level Agreements (SLAs) per cluster.

- Storage Controller (SC):

It is written in Java and is the Eucalyptus equivalent to AWS EBS. It communicates with the Cluster Controller and Node Controller and manages Eucalyptus block volumes and snapshots to the instances within its specific cluster. If an instance requires writing persistent data to memory outside of the cluster, it would need to write to Walrus, which is available to any instance in any cluster.

- VMware Broker:

This is an optional component that provides an AWS-compatible interface for VMware environments and physically runs on the Cluster Controller. The VMware Broker overlays existing ESX/ESXi hosts and transforms Eucalyptus Machine Images (EMIs) to VMware virtual disks. The VMware Broker mediates interactions between the Cluster Controller and VMware and can connect directly to either ESX/ESXi hosts or to vCenter Server.

- Node Controller (NC):

It is written in C and hosts the virtual machine instances and manages the virtual network endpoints. It downloads and caches images from Walrus as well as creates and caches instances. While there is no theoretical limit to the number of Node Controllers per cluster, performance limits do exist.

Functionality

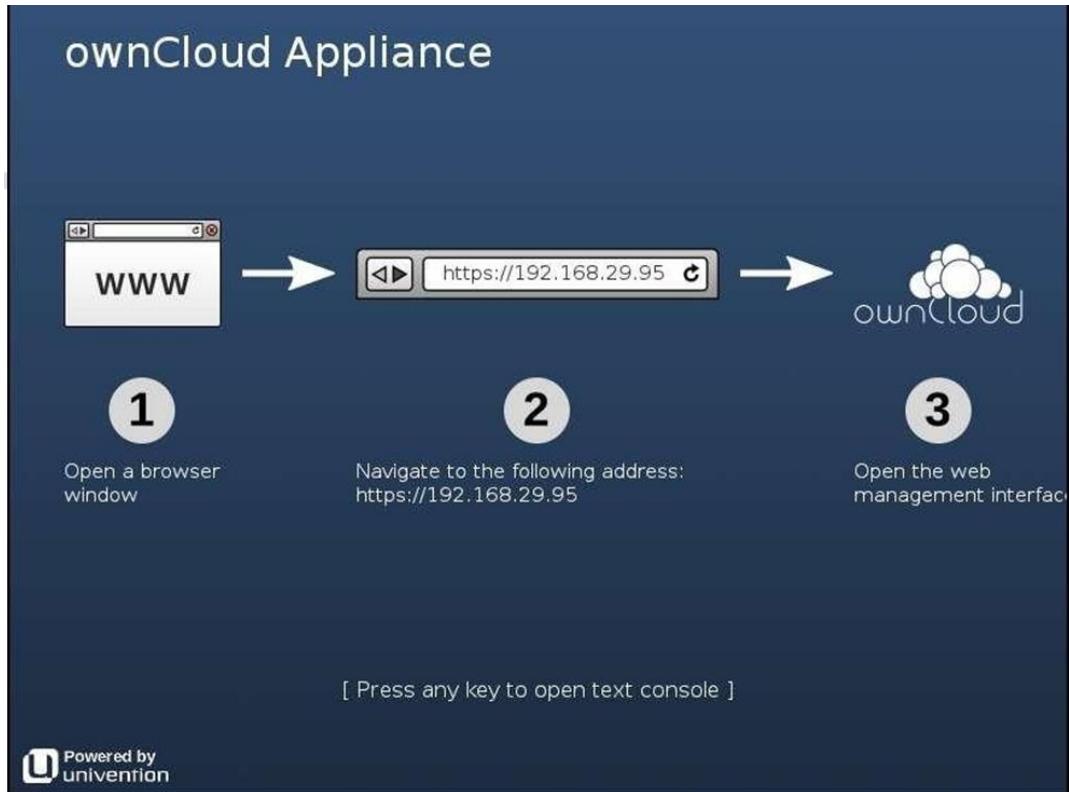
- The Eucalyptus User Console provides an interface for users to self-service provision and configure compute, network, and storage resources. Development and test teams can manage virtual instances using built-in key management and encryption capabilities. Access to virtual instances is available using familiar SSH and RDP mechanisms. Virtual instances with application configuration can be stopped and restarted using encrypted boot from EBS capability.
- IaaS service components Cloud Controller, Cluster Controller, Walrus, Storage Controller, and VMware Broker are configurable as redundant systems that are resilient to multiple types of failures. Management state of the cloud machine is preserved and reverted to normal operating conditions in the event of a hardware or software failure.
- Eucalyptus can run multiple versions of Windows and Linux virtual machine images. Users can build a library of Eucalyptus Machine Images(EMIs) with application metadata that are decoupled from infrastructure details to allow them to run on Eucalyptus clouds. Amazon Machine Images are also compatible with Eucalyptus clouds. VMware Images and vApps can be converted to run on Eucalyptus clouds and AWS public clouds.
- Eucalyptus user identity management can be integrated with existing Microsoft Active Directory or LDAP systems to have fine-grained role-based access control over cloud resources.

- Eucalyptus supports storage area network devices to take advantage of storage arrays to improve performance and reliability. Eucalyptus Machine Images can be backed by EBS-like persistent storage volumes, improving the performance of image launch time and enabling fully persistent virtual machine instances. Eucalyptus also supports direct-attached storage

Practical 7

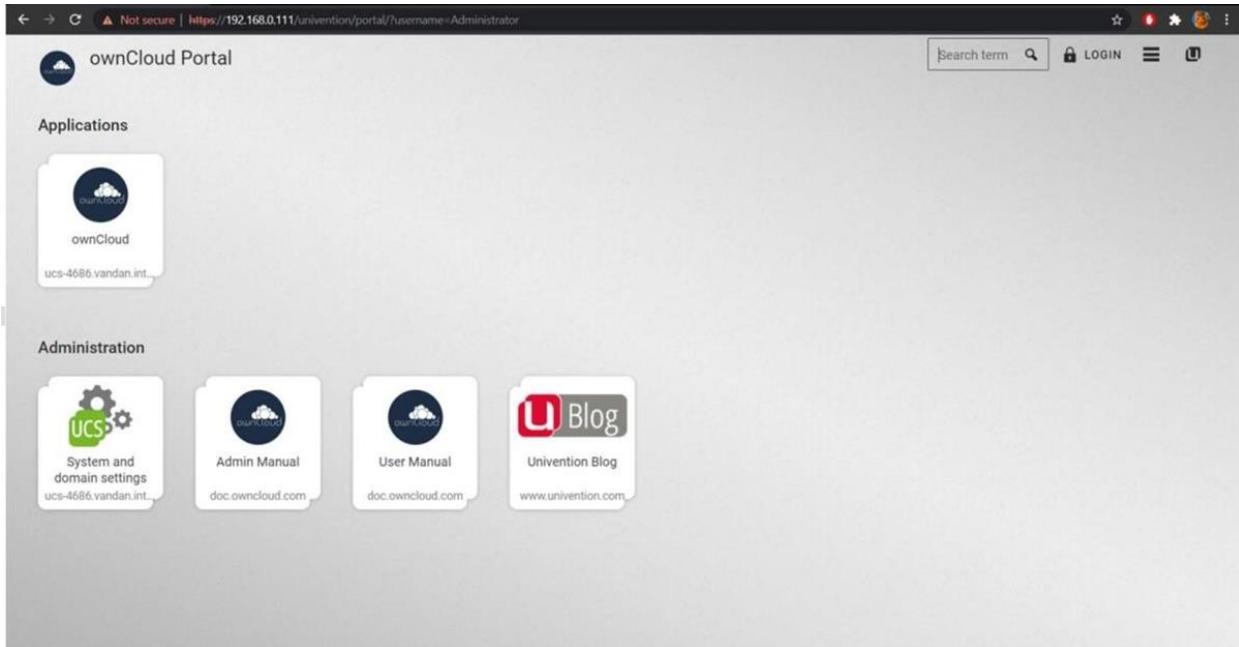
Steps:

1. Open VMWare and power on the owncloud VM.

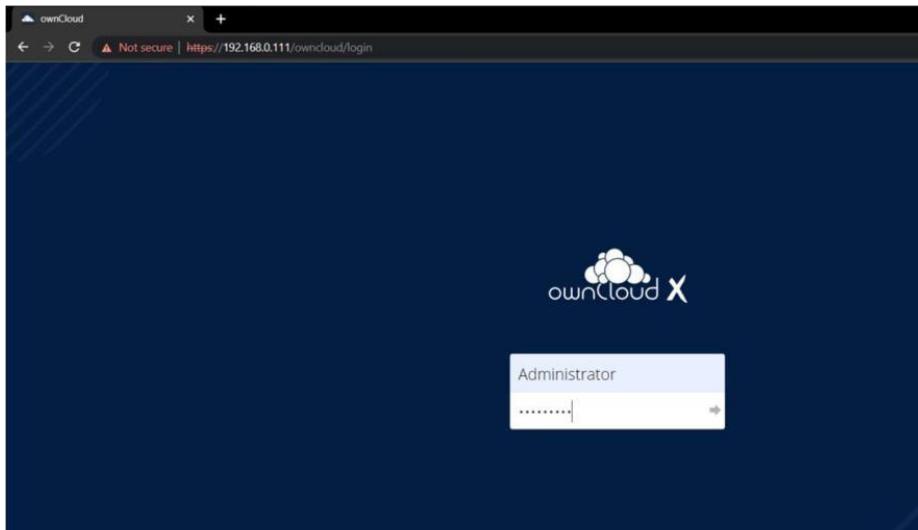


2. Now you can see the IP address on top right-hand side, open the browser and enter system's IP address in URL bar and press enter -> log in to your account admin account -> open owncloud in application section





3. Enter admin name and password which you have set while creating account and click on “Log in”.



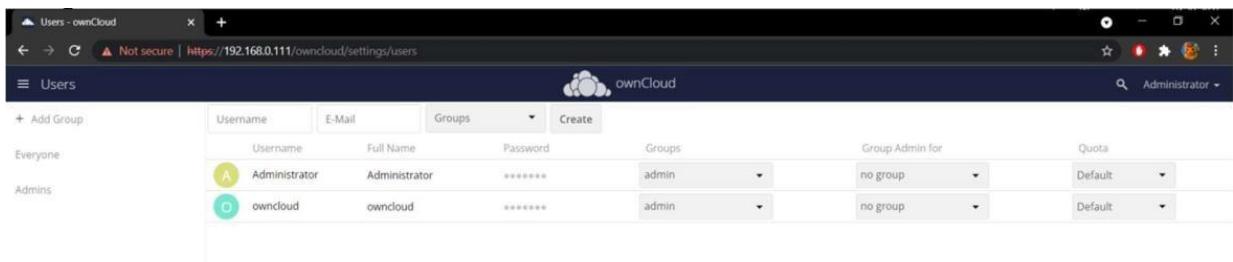
4. Following dashboard will get load



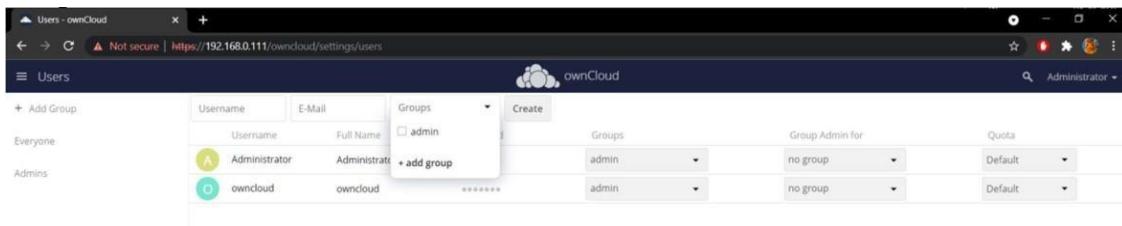
5. Now go to “Users”.



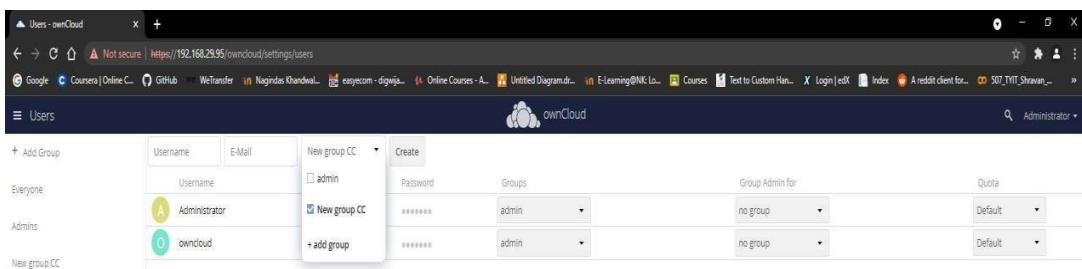
6. You can see that there is only user which is admin, which is in Group admin



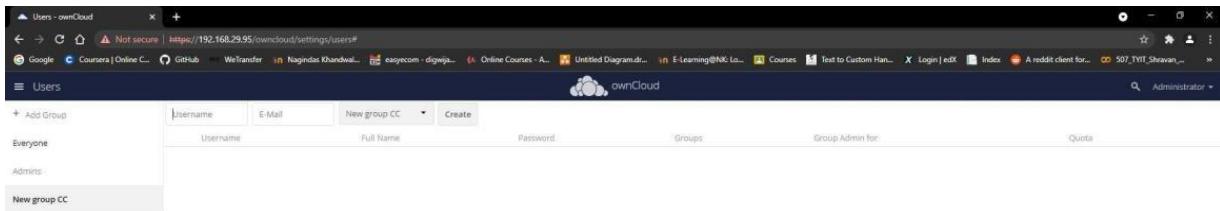
7. Now let's add group, for that go to “Group” > “add group”



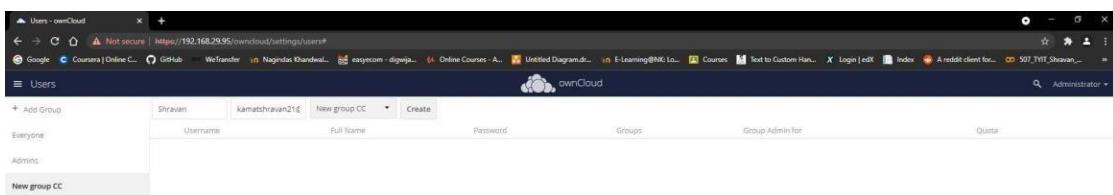
8. Enter group name and press “enter”.



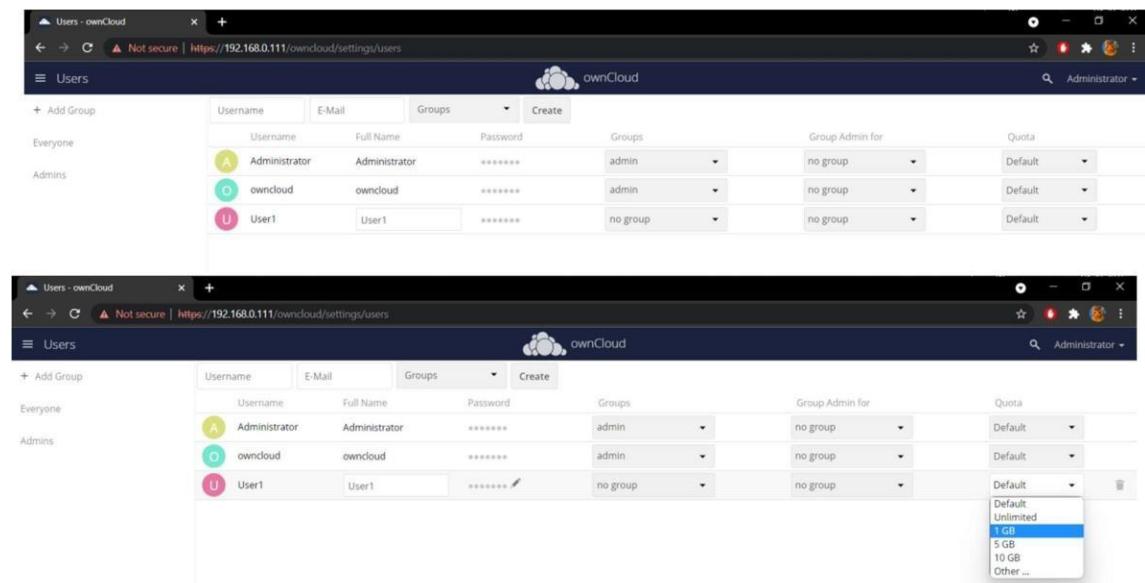
9. Our group has been added, now select it.



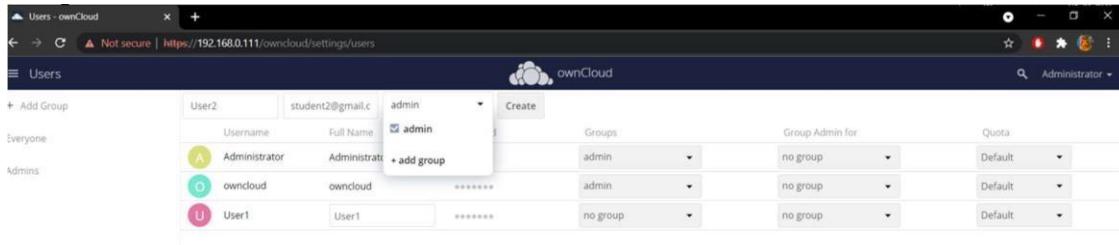
10. Now enter “Username” and “E-mail” for the user and click on “Create”



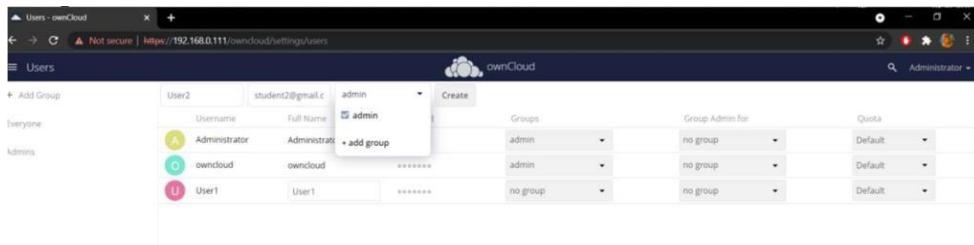
11. Our user is been added we can change the storage limit for the new user.



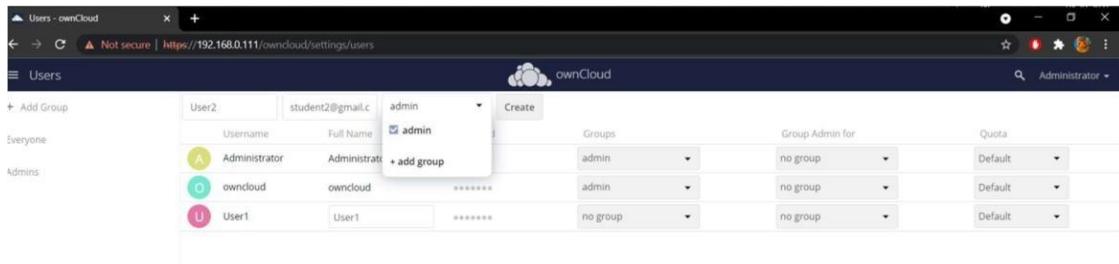
12. Let's add another user but this time in “admin” group



13. If it shows “admin, admin” in group just click on it and uncheck one “admin”



14. Before Logging out from admin account, set new password in the password field.



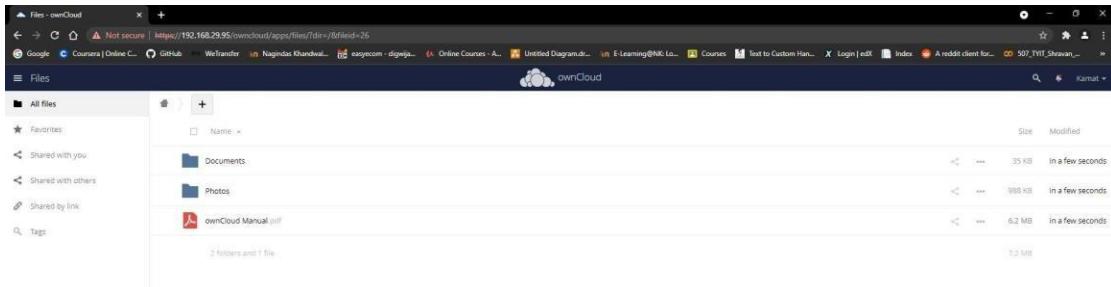
15. Now “Log out” from the admin account.

16. Try log in with user you just created.

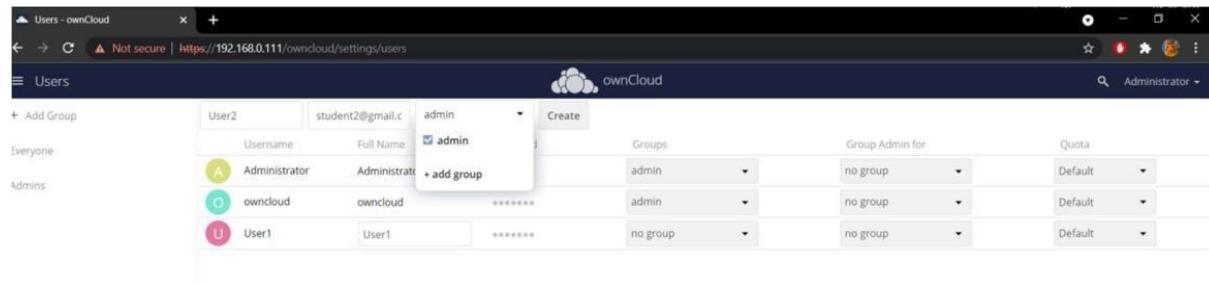
Yes, it has successfully logged in. As you can see this user don't have any privilege link adding users and creating group because it's not in “admin” group, now “log out” from the account.

17. Now let's try to log in from the user account who is in “admin” group.

18. Enter login details and click on “Log in”.



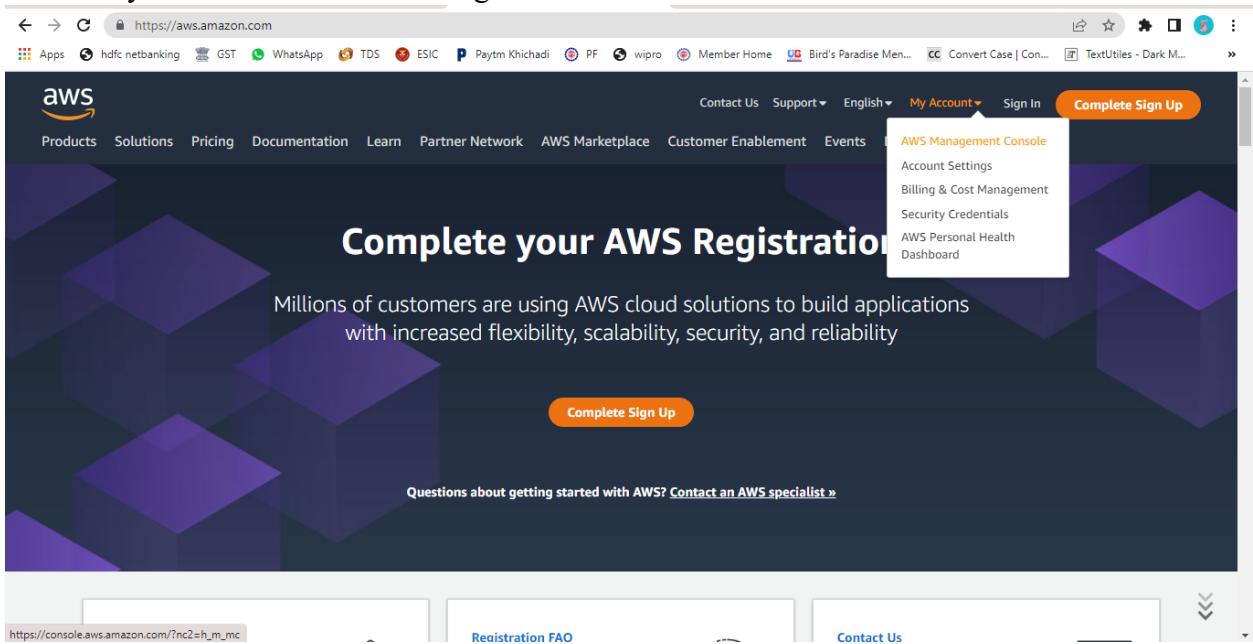
As you can see this user has the privileges of admin because he is in “admin” group. Note: If it doesn’t show the privilege then go to admin account and check if this user group is “admin” group. This user has all the rights that admin possess like adding or deleting user



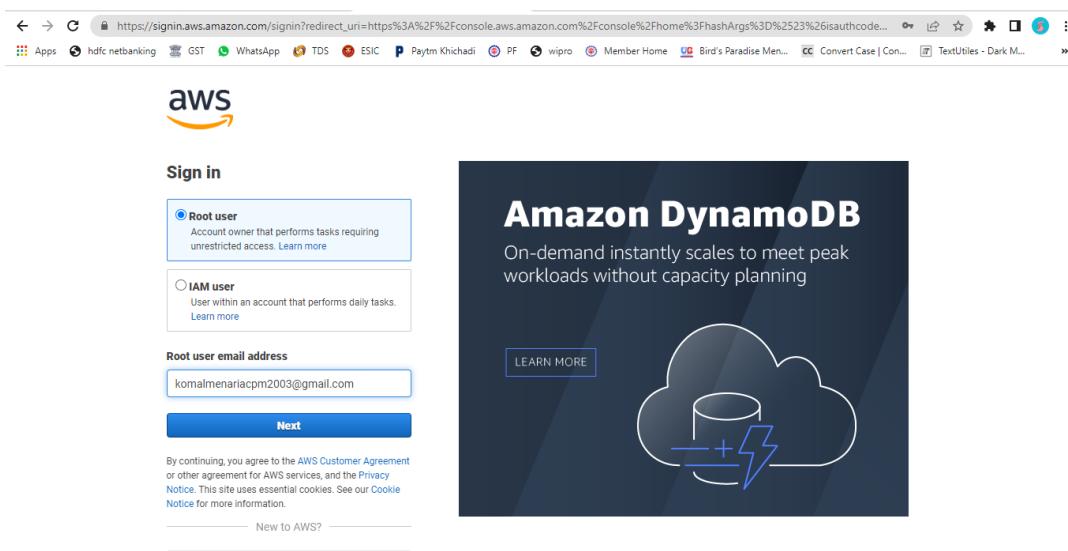
Practical 8

Steps:

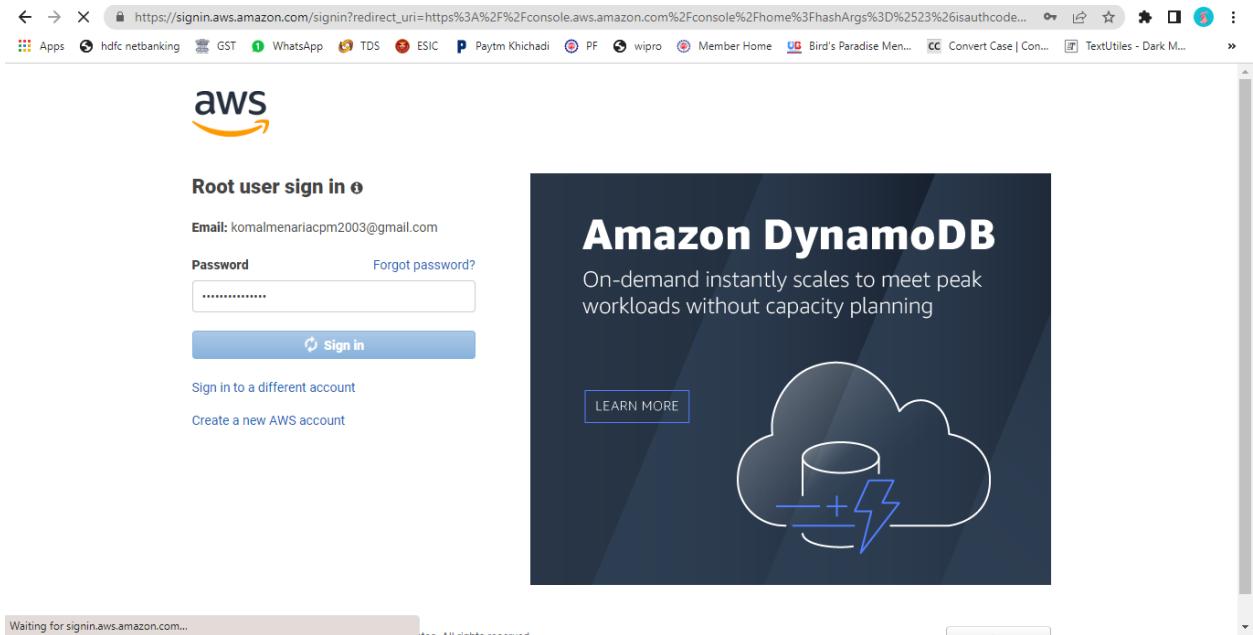
1. Click on the link: <https://aws.amazon.com/console/>
2. Go to “My Account” > “AWS Management Console”.



3. Just login to your user’s account



4. Click on "Sign In".



5. Once you logged in go to "My security credentials".

A screenshot of the AWS IAM Your Security Credentials page. The URL is https://us-east-1.console.aws.amazon.com/iam/home?region=us-west-2#/security_credentials. The left sidebar shows navigation options like Dashboard, Access management, and Access reports. The main content area is titled "Your Security Credentials" and provides information on managing AWS credentials. It includes sections for Password, Multi-factor authentication (MFA), Access keys, CloudFront key pairs, X.509 certificate, and Account identifiers. A note at the top says, "Use this page to manage the credentials for your AWS account. To manage credentials for AWS Identity and Access Management (IAM) users, use the IAM Console." A search bar at the top says "Search for services, features, blogs, docs, and more".

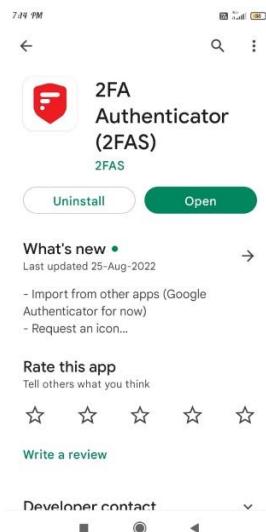
6. Scroll down you will find “Multi-factor authentication (MFA)”. Click on “Activate MFA”

The screenshot shows the AWS IAM 'Your Security Credentials' page. On the left, there's a navigation sidebar with 'Identity and Access Management (IAM)' selected. Under 'Access management', the 'Multi-factor authentication (MFA)' option is expanded, revealing a 'Activate MFA' button. Other sections like 'Access keys', 'CloudFront key pairs', 'X.509 certificate', and 'Account identifiers' are also listed.

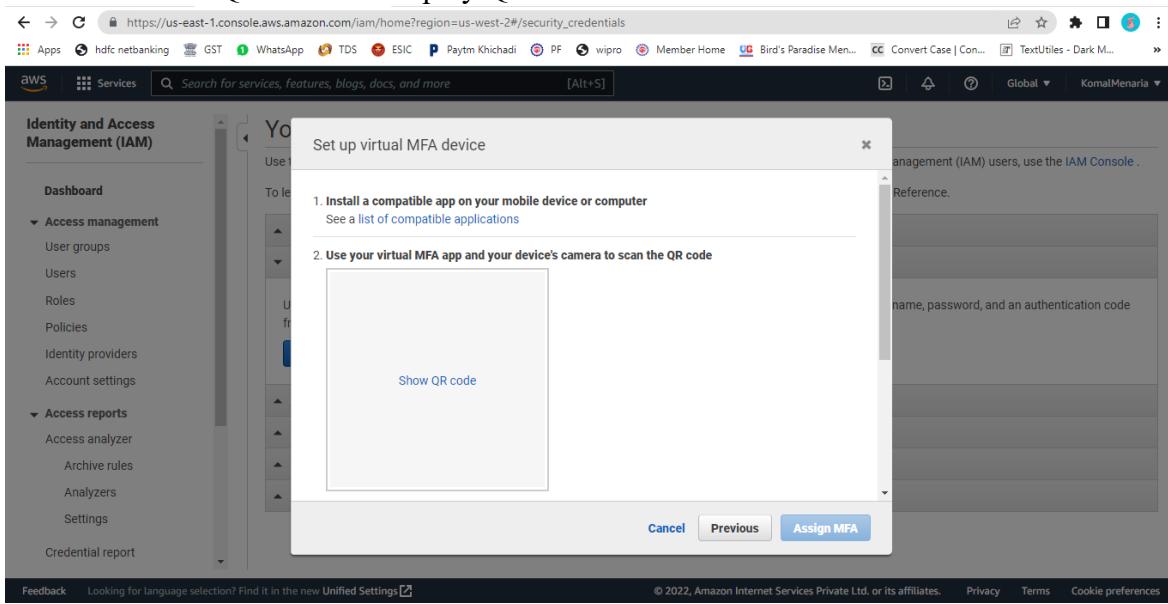
7. We will select first option “Virtual MFA device” and click on “Continue”

The screenshot shows a 'Manage MFA device' dialog box. It asks to choose the type of MFA device, with three options: 'Virtual MFA device' (selected), 'Security key', and 'Other hardware MFA device'. Below the options, there's a note about supported MFA devices. At the bottom right are 'Cancel' and 'Continue' buttons.

8. So, concept is we will use third party app to generate OTP which will help us to authenticate ourselves during logging in. It will add a security layer to our account. Now we have to download “2FA Authenticator (2FAS)” app on our mobile.



9. Click on “Show QR code” to display QR code.

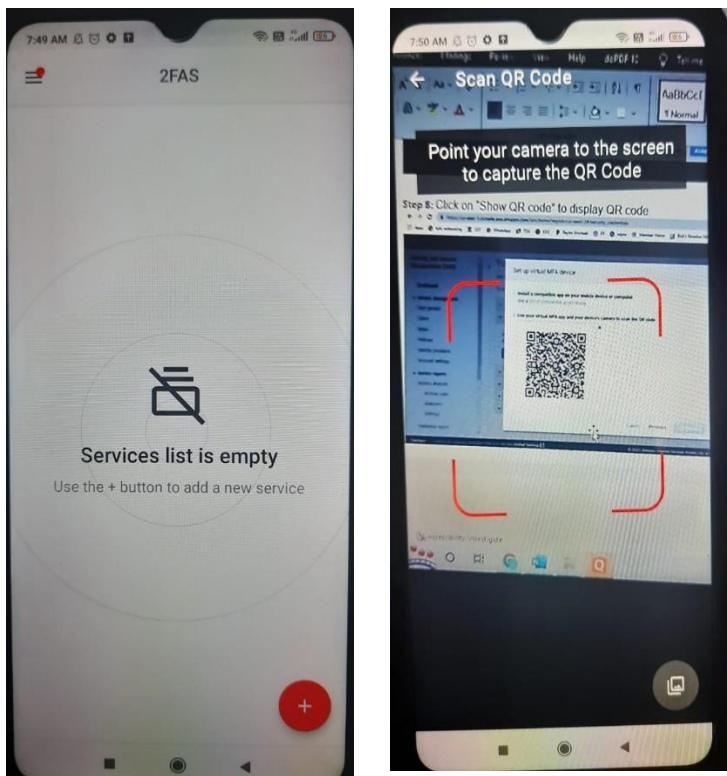


Set up virtual MFA device

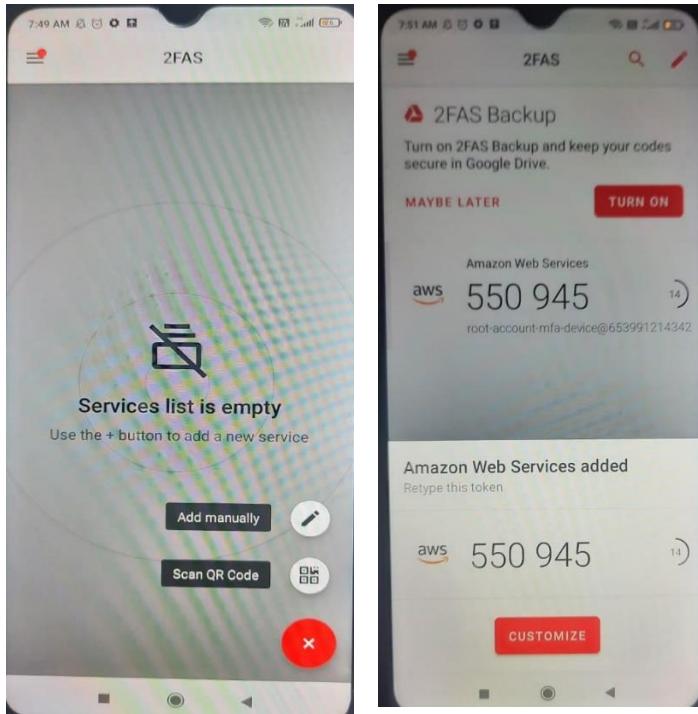
1. Install a compatible app on your mobile device or computer
See a list of compatible applications
2. Use your virtual MFA app and your device's camera to scan the QR code

Cancel Previous Assign MFA

Step 10: And click on “Scan QR code”.



Step 11: First, we have to enter 2 OTP which we will receive on app and click “Assign MFA”.



The screenshot shows the AWS Identity and Access Management (IAM) console. On the left, the navigation menu includes 'Identity and Access Management (IAM)', 'Dashboard', 'Access management', 'User groups', 'Users', 'Roles', 'Policies', 'Identity providers', 'Account settings', 'Access reports', 'Access analyzer', 'Analyzers', 'Settings', and 'Credential report'. A modal window titled 'Set up virtual MFA device' is open in the center. It contains a QR code, a note to type the secret key if needed, and two input fields for 'MFA code 1' (containing '252100') and 'MFA code 2' (containing '335524'). At the bottom of the modal are 'Cancel', 'Previous', and 'Assign MFA' buttons. The URL in the browser bar is https://us-east-1.console.aws.amazon.com/iam/home?region=us-west-2#security_credentials.

Step 12: Click on "Close".

The screenshot shows a modal window titled 'Set up virtual MFA device'. It contains a message: 'You have successfully assigned virtual MFA. This virtual MFA will be required during sign-in.' A 'Close' button is at the bottom right. The background shows the IAM dashboard with a sidebar menu.

Step 13: Log out from the account.

The screenshot shows the 'Your Security Credentials' page. On the right, a sidebar menu is open, showing 'Account ID: 6539-9121-4342' and several options: Account, Organization, Service Quotas, Billing Dashboard, Security credentials, and Settings. At the bottom right of the main content area is a prominent orange 'Sign out' button.

Step 14: Now again try to log in to your account.

https://signin.aws.amazon.com/signin?redirect_uri=https%3A%2F%2Fconsole.aws.amazon.com%2Fconsole%2Fhome%3FhashArgs%3D%2523%26isauthcode... 

Sign in

Root user
Account owner that performs tasks requiring unrestricted access. [Learn more](#)

IAM user
User within an account that performs daily tasks. [Learn more](#)

Root user email address

Next

By continuing, you agree to the [AWS Customer Agreement](#) or other agreement for AWS services, and the [Privacy Notice](#). This site uses essential cookies. See our [Cookie Notice](#) for more information.

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Amazon DynamoDB
On-demand instantly scales to meet peak workloads without capacity planning
[LEARN MORE](#)


https://signin.aws.amazon.com/signin?redirect_uri=https%3A%2F%2Fconsole.aws.amazon.com%2Fconsole%2Fhome%3FhashArgs%3D%2523%26isauthcode... 

Root user sign in

Email: komalmenariacpm2003@gmail.com

Password [Forgot password?](#)

Sign in

[Sign in to a different account](#)

[Create a new AWS account](#)


Amazon ElastiCache
Boost application performance, unlock microsecond latency and scale
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Step 15: It will ask for MFA code. You get new code after every 30 seconds, just enter the valid MFA code and click on “Submit” to login.

