Lab Journal for

Cloud Service Design Lab

(ITL603)

Semester VI

Bachelor's Degree in Information Technology

Don Bosco Institute of Technology, Mumbai 400070 (Affiliated to the University of Mumbai)

Department of Information Technology Academic Year 2020–2021

INDEX

Roll No : 64

Assignment No.01

- VMware Workstation Player :-

Steps to install VMware workstation Player

Download from given link below :

https://my.vmware.com/web/vmware/downloads

1. Run the Installer

Click next & accept the license terms

2. Custom Setup

Select Installation directory

Check Enhanced Keyboard drivers option.

3. User Experience Settings

Chek the product update at startup and join the VMware Customer Program

4. Select Shortcuts.

Check the box where shortcut to run the applicati will be created.

5. Ready to Install

Click on Install

Click on Finish to complete Installation

6. License

Now, Run application

Select non-commercial use

Click on Finish.

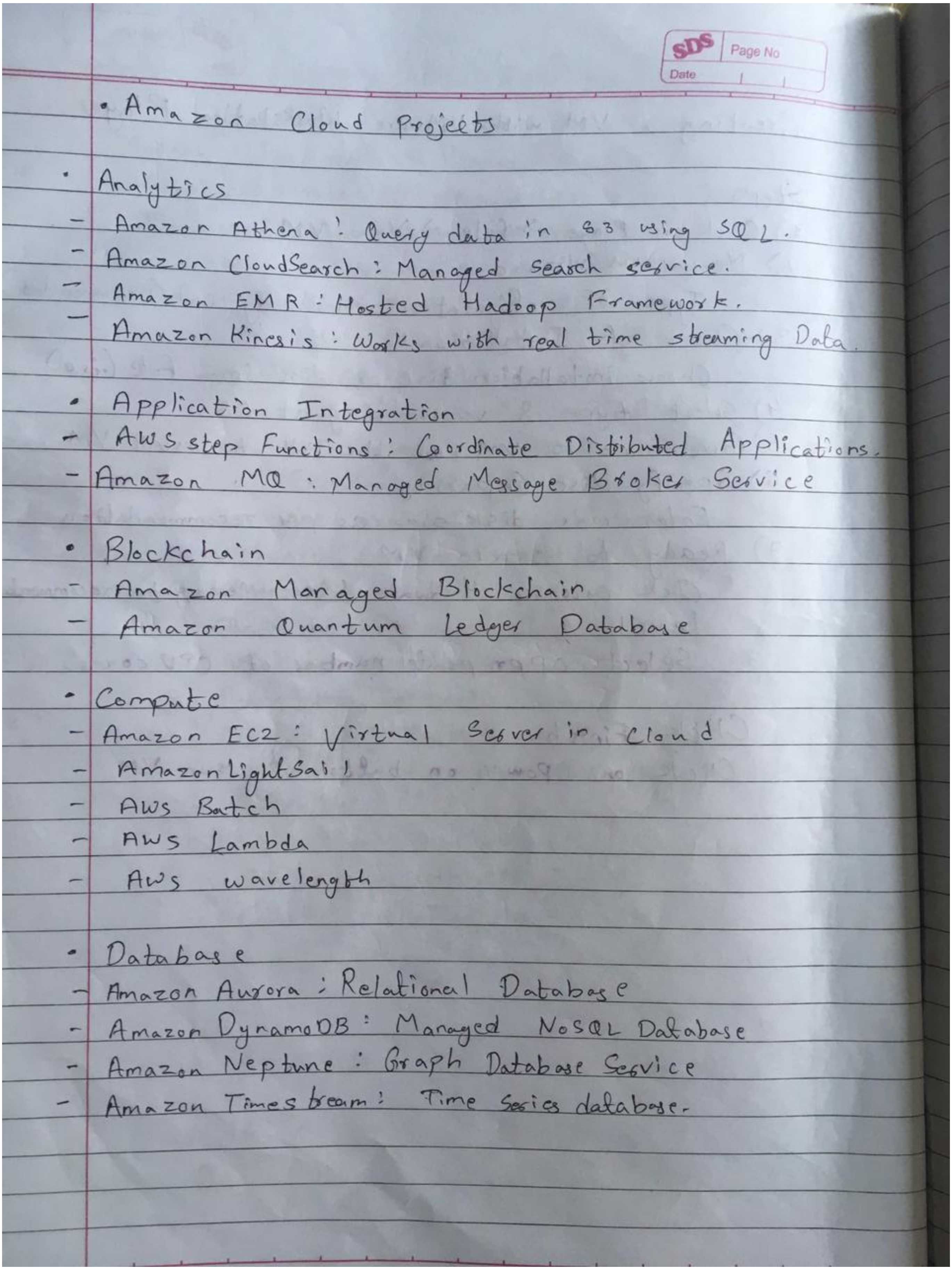
- Creating a VM with VMware Workstation Player

Steps :

1) Click on Player → file → New VM
2) New VM Wizard
   Type of configuration choose Typical (Recommended)
3) Guest of Installation :
   Choose installation disc or disc image file (.iso)
4) Select type & version of guest OS
5) Give name to VM, set the path to install VM
6) Specify Disc Capacity.
   Enter max disk size as per recommendation
7) Ready to create VM
   Click customize Hardware & set Memory to recommendation level.
   Select appropriate number of CPU cores.

Click Finish.

Click on Power on button to run VM



- Amazon Cloud Projects

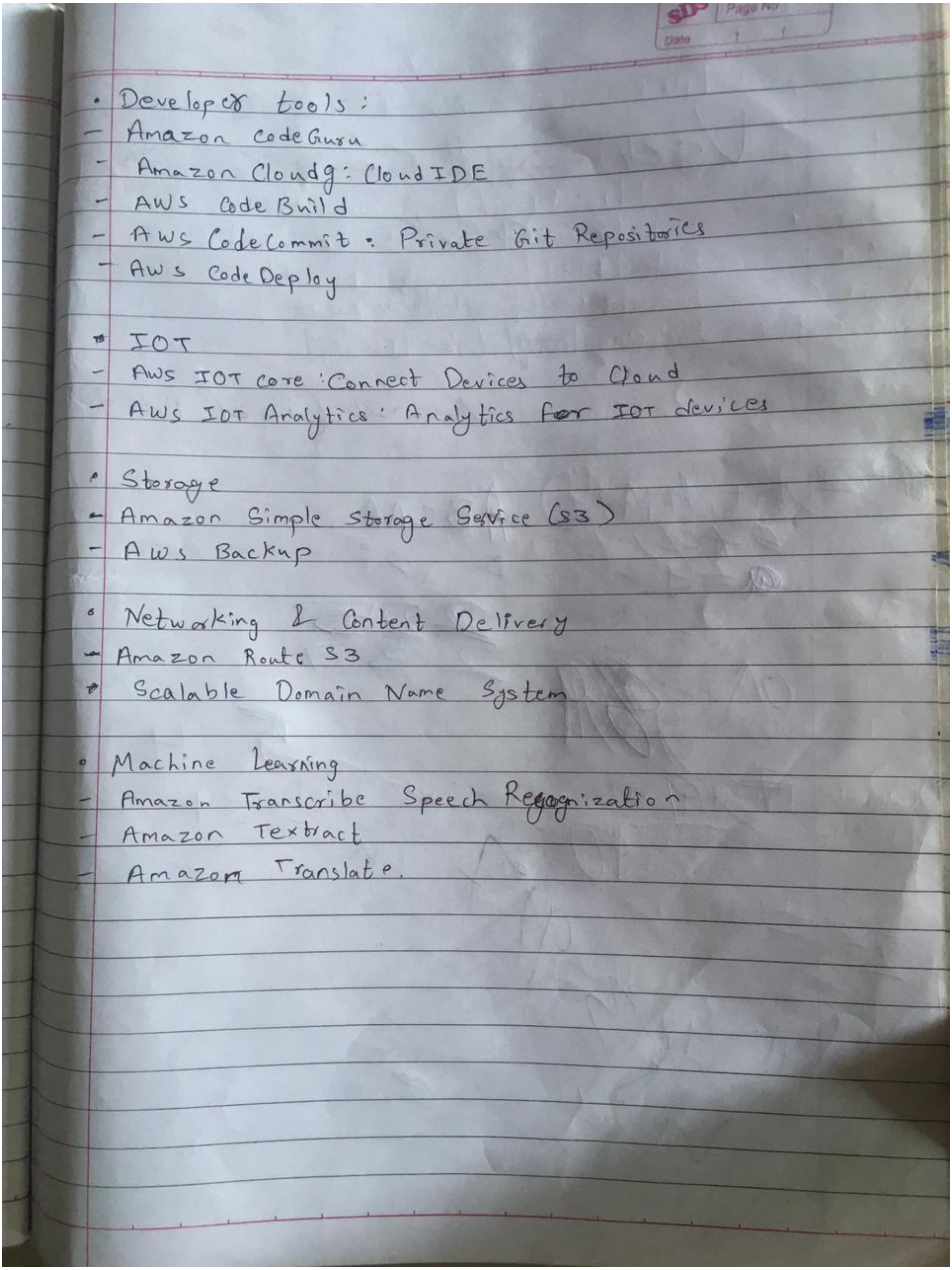
- Analytics
- Amazon Athena : Query data in S3 using SQL.
- Amazon CloudSearch : Managed search service.
- Amazon EMR : Hosted Hadoop Framework.
- Amazon Kinesis : Works with real time streaming Data.

- Application Integration
- AWS step Functions : Coordinate Distibuted Applications.
- Amazon MQ : Managed Message Broker Service

- Blockchain
- Amazon Managed Blockchain
- Amazon Quantum Ledger Database

- Compute
- Amazon EC2 : Virtual Server in Cloud
- Amazon LightSail
- AWS Batch
- AWS Lambda
- AWS wavelength

- Database
- Amazon Aurora : Relational Database
- Amazon DynamoDB : Managed NoSQL Database
- Amazon Neptune : Graph Database Service
- Amazon Timestream : Time Series database.



- Developer tools:
- Amazon CodeGuru
- Amazon Cloudg: Cloud IDE
- AWS Code Build
- AWS CodeCommit : Private Git Repositories
- AWS Code Deploy

- IOT
- AWS IOT core : Connect Devices to Cloud
- AWS IOT Analytics : Analytics for IOT devices

- Storage
- Amazon Simple Storage Service (S3)
- AWS Backup

- Networking & Content Delivery
- Amazon Route S3
- Scalable Domain Name System

- Machine Learning
- Amazon Transcribe Speech Regognization
- Amazon Textract
- Amazon Translate.

Assignment - 2

- How to create a website and host it oncloud?

A.

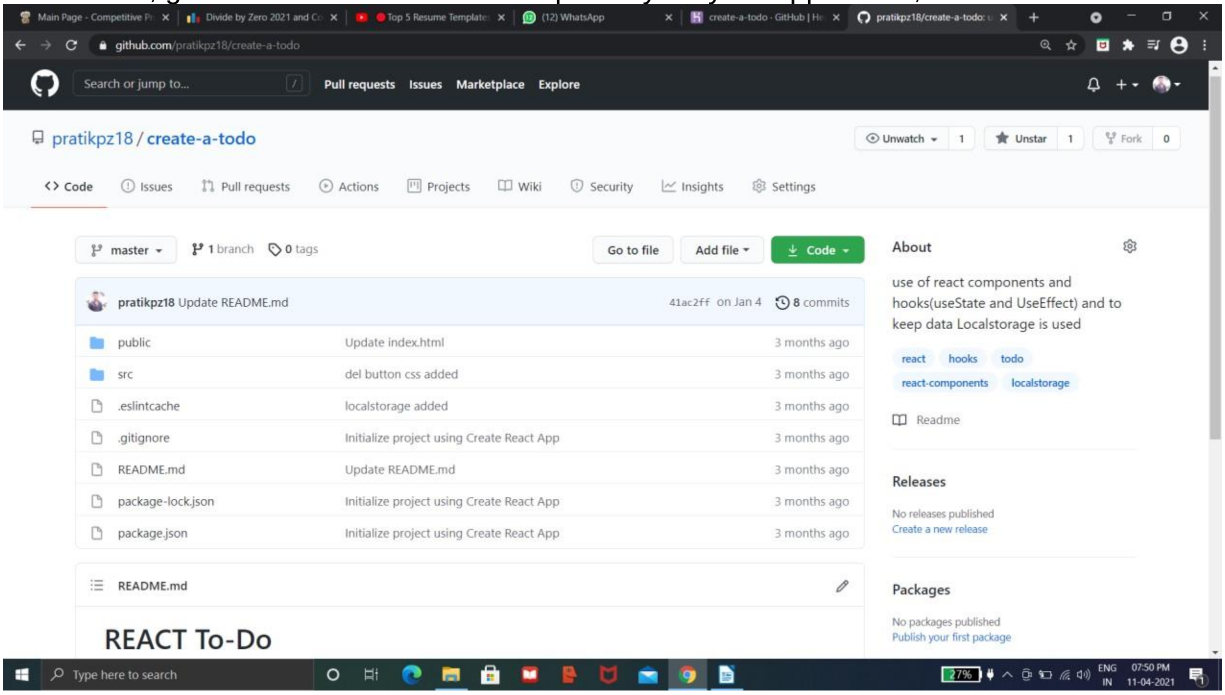
Step 1-The first step is to create a simple structure for our project with some basic files. In a new folder I'll open a terminal and run the command**npm init -y**in order to create a new project.

Once this library is installed, we can create a new file for our project, named**app.js**. Inside it we'll write the code for our simple server:

Step 2- The next step is to choose a version control system and to place our code in a development platform in a repository.

The most popular version control system is Git along with Github as a development platform, so that's what we'll use here.

On GitHub, go ahead and create a new repository for your application, like this:



pratikpz18 / create-a-todo

pratikpz18 Update README.md 41ac2ff on Jan 4 8 commits

public	Update index.html	3 months ago
src	del button css added	3 months ago
.eslintcache	localstorage added	3 months ago
.gitignore	Initialize project using Create React App	3 months ago
README.md	Update README.md	3 months ago
package-lock.json	Initialize project using Create React App	3 months ago
package.json	Initialize project using Create React App	3 months ago

README.md

REACT To-Do

About

use of react components and hooks(useState and UseEffect) and to keep data Localstorage is used

react hooks todo react-components localstorage

Readme

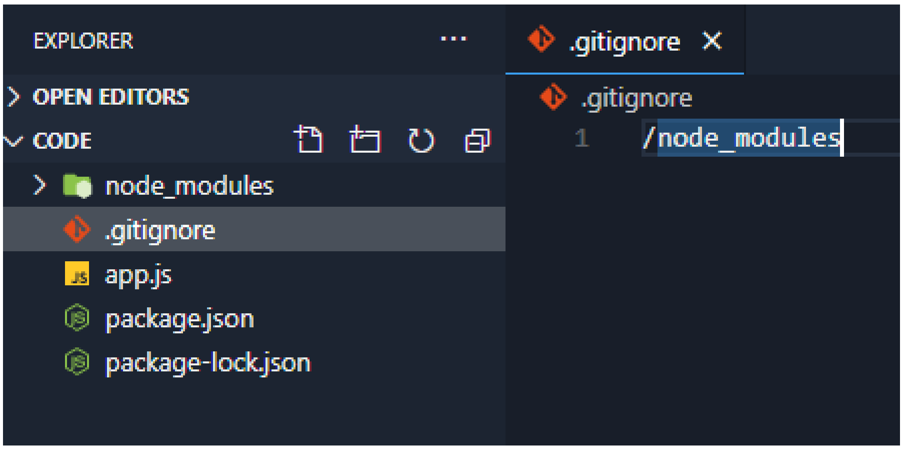
Releases

No releases published
Create a new release

Packages

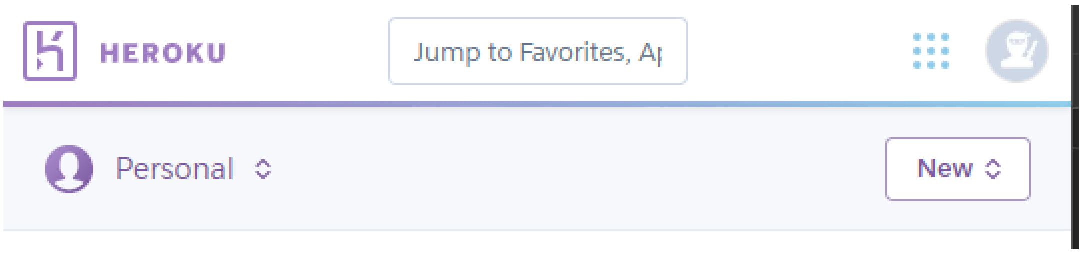
No packages published
Publish your first package

Step 3-Before we do this, we must ignore some files. We want to upload to the repository only the code that we write, without the dependencies (the installed modules).
For that, we need to create a new file .gitignore and inside it write the file that we want to ignore.

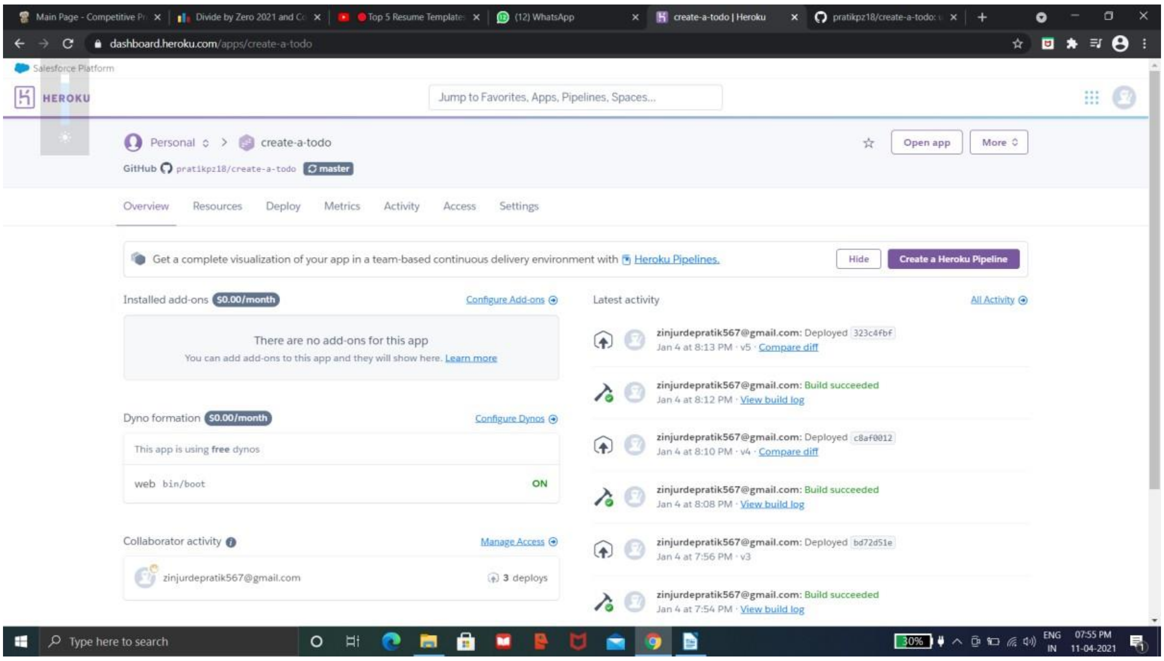


```
/node_modules
```

Step 4-Atthis step, we canlinkthe repository from Githubtoour Heroku application.First, create a new application on Heroku and follow the steps listed ontheplatform.



Once the application has been created, a window similar to this shouldappear:



Personal > create-a-todo

GitHub pratikpz18/create-a-todo master

Get a complete visualization of your app in a team-based continuous delivery environment with Heroku Pipelines.

Installed add-ons $0.00/month

There are no add-ons for this app
You can add add-ons to this app and they will show here. Learn more

Dyno formation $0.00/month

This app is using free dynos

web bin/boot ON

Collaborator activity

zinjurdepratik567@gmail.com 3 deploys

Latest activity

zinjurdepratik567@gmail.com: Deployed 323c4fbf
Jan 4 at 8:13 PM · v5 · Compare diff

zinjurdepratik567@gmail.com: Build succeeded
Jan 4 at 8:12 PM · View build log

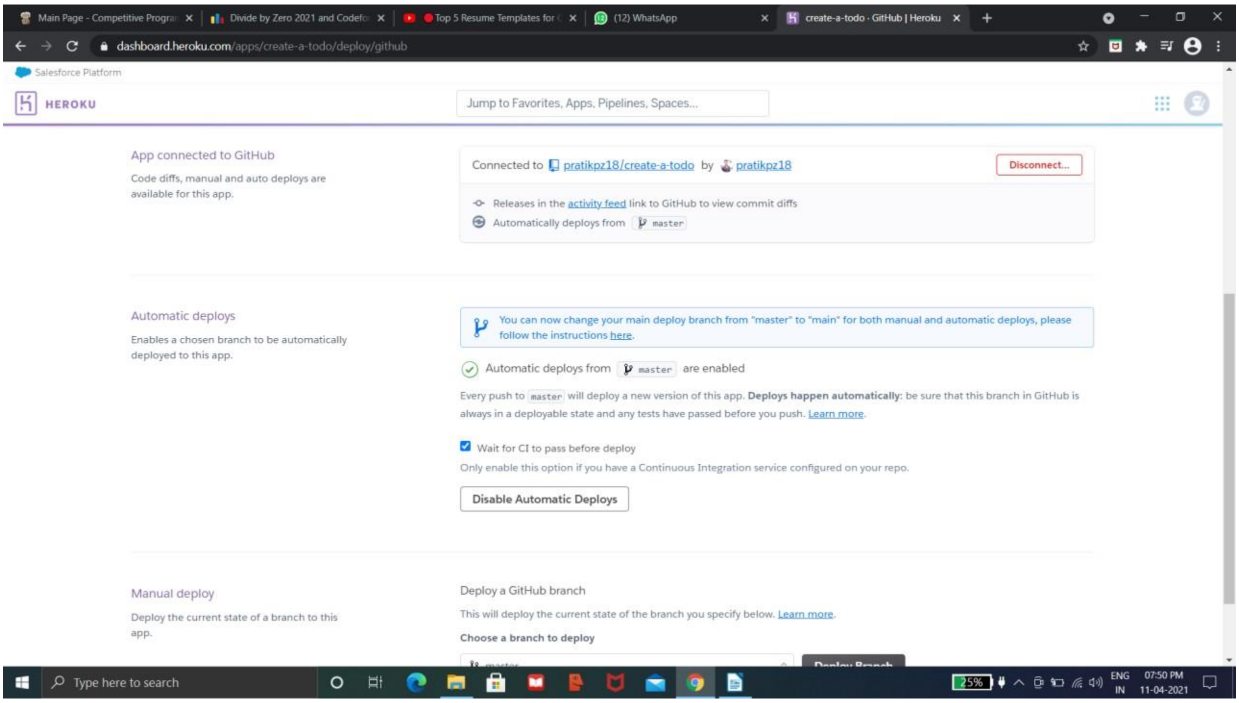
zinjurdepratik567@gmail.com: Deployed c8af0012
Jan 4 at 8:10 PM · v4 · Compare diff

zinjurdepratik567@gmail.com: Build succeeded
Jan 4 at 8:08 PM · View build log

zinjurdepratik567@gmail.com: Deployed bd72d51e
Jan 4 at 7:56 PM · v3

zinjurdepratik567@gmail.com: Build succeeded
Jan 4 at 7:54 PM · View build log

Now, if you look at the navigation at the top, you'll see Overview, Resources, Deploy, Metrics and so on. Be sure that Deploy is selected. Then on the second row, click on the GitHub icon.



App connected to GitHub

Code diffs, manual and auto deploys are available for this app.

Connected to pratikpz18/create-a-todo by pratikpz18

Releases in the activity feed link to GitHub to view commit diffs

Automatically deploys from master

Automatic deploys

Enables a chosen branch to be automatically deployed to this app.

You can now change your main deploy branch from "master" to "main" for both manual and automatic deploys, please follow the instructions here.

Automatic deploys from master are enabled

Every push to master will deploy a new version of this app. **Deploys happen automatically:** be sure that this branch in GitHub is always in a deployable state and any tests have passed before you push. Learn more.

☑ Wait for CI to pass before deploy

Only enable this option if you have a Continuous Integration service configured on your repo.

Manual deploy

Deploy the current state of a branch to this app.

Deploy a GitHub branch

This will deploy the current state of the branch you specify below. Learn more.

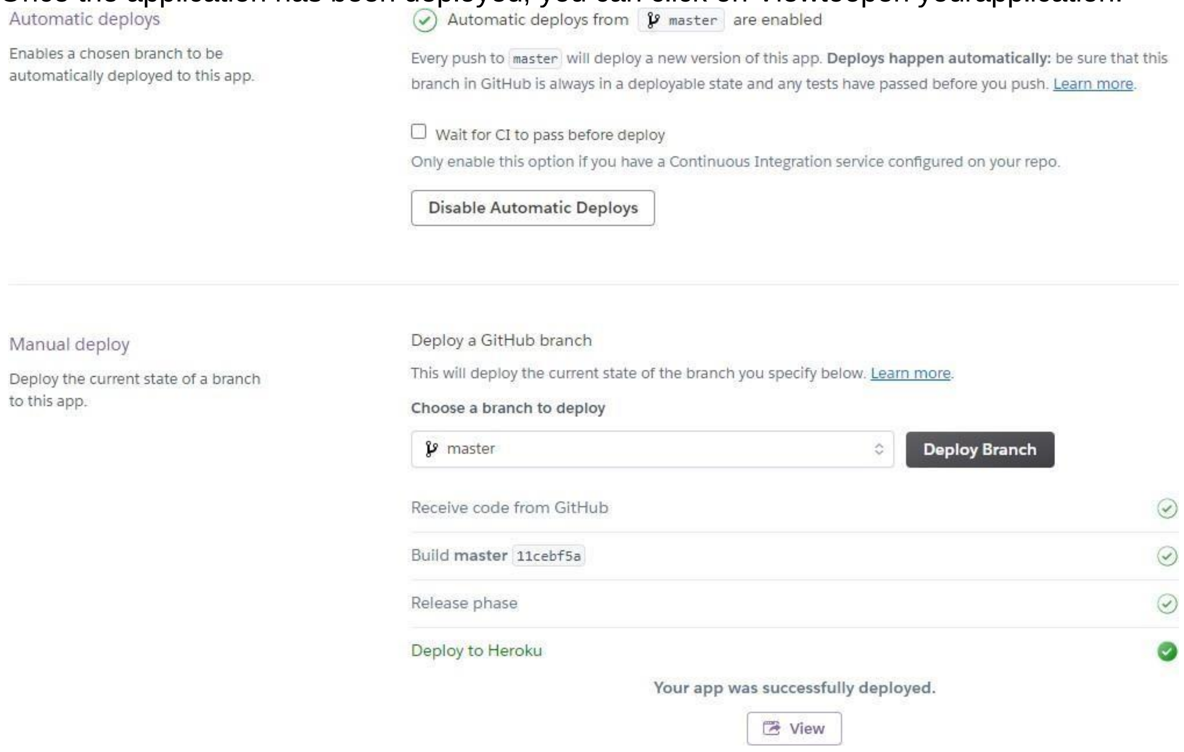
Choose a branch to deploy

dashboard.heroku.com/apps/create-a-todo/deploy/github
HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
Disconnect...
Disable Automatic Deploys
Deploy Branch
Type here to search
07:50 PM
11-04-2021

Search for the desired application, which is demo-deploy-app-09 in our case. Then click Connect. Once the application is successfully connected with your Heroku account, you can click Deploy Branch to deploy your application.

Ifyouwant,youcanalsoselecttheoptionEnableAutomaticDeployswhichwillautomaticallypullthecode from

your Github repository every time youmakea push to thatrepository.
Once the application has been deployed, you can click on Viewtoopen yourapplication.



Automatic deploys

Enables a chosen branch to be automatically deployed to this app.

✓ Automatic deploys from `master` are enabled

Every push to `master` will deploy a new version of this app. **Deploys happen automatically:** be sure that this branch in GitHub is always in a deployable state and any tests have passed before you push. Learn more.

□ Wait for CI to pass before deploy

Only enable this option if you have a Continuous Integration service configured on your repo.

Manual deploy

Deploy the current state of a branch to this app.

Deploy a GitHub branch

This will deploy the current state of the branch you specify below. Learn more.

Choose a branch to deploy

master

Receive code from GitHub ✓

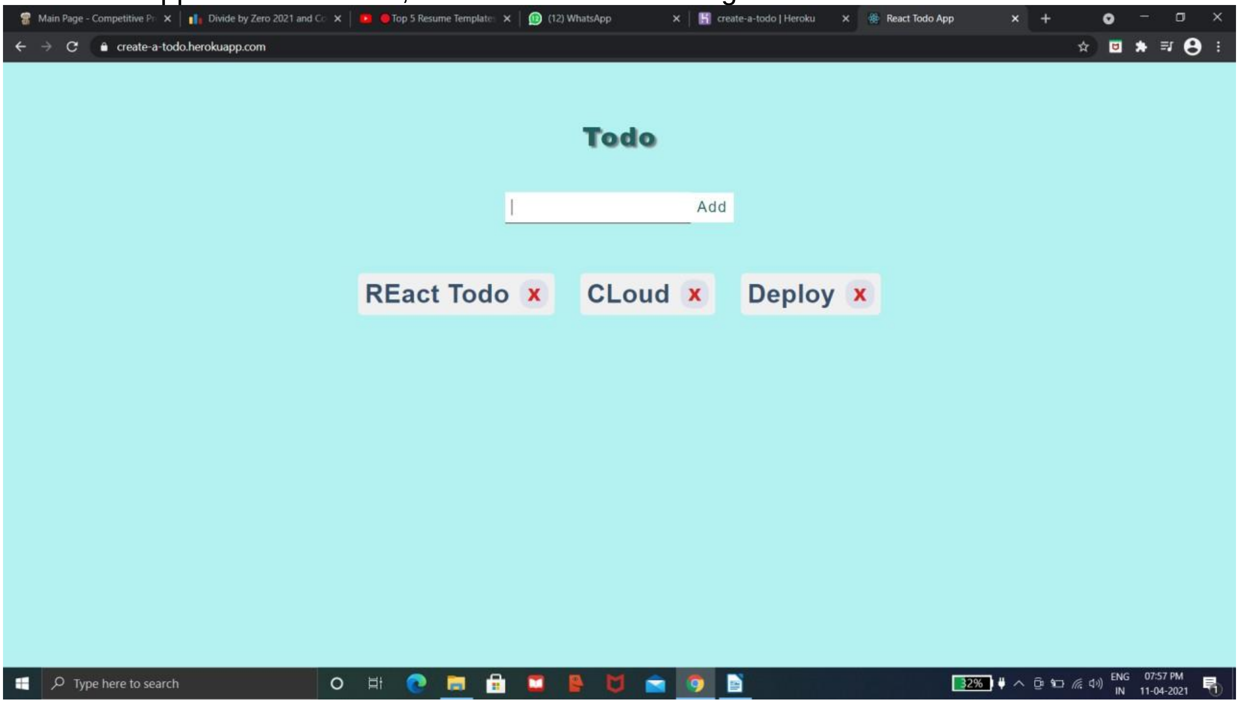
Build **master** `11cebf5a` ✓

Release phase ✓

Deploy to Heroku ✓

Your app was successfully deployed.

Once the application is rebuilt, we should see it working like so:



Link : https://create-a-todo.herokuapp.com/

What are the steps to create asimplewebsite?

- **Register yourdomainname**

Yourdomainname should reflect your products or services so that your customers can easilyfindyourbusinessthroughasearchengine.Yourcustomersmayalsoexpectyourdomainnametobesimilarto your business name. Yourdomainname will alsobeused for your email address. To register yourdomainname, you will need tofindan accredited registrar and pay a fee. Remember to note when your domain name will need renewing soitdoesn'texpire.

- **Find a webhostingcompany**

You will needtofinda web hosting companytoget your domain name on the internet. Mostofthemajorinternetserviceprovidersofferwebhostingservices.Monthlyfeesforwebhostingvarydependingonhowlargeyourwebsiteisandhow many visits youget.

- **Prepareyourcontent**

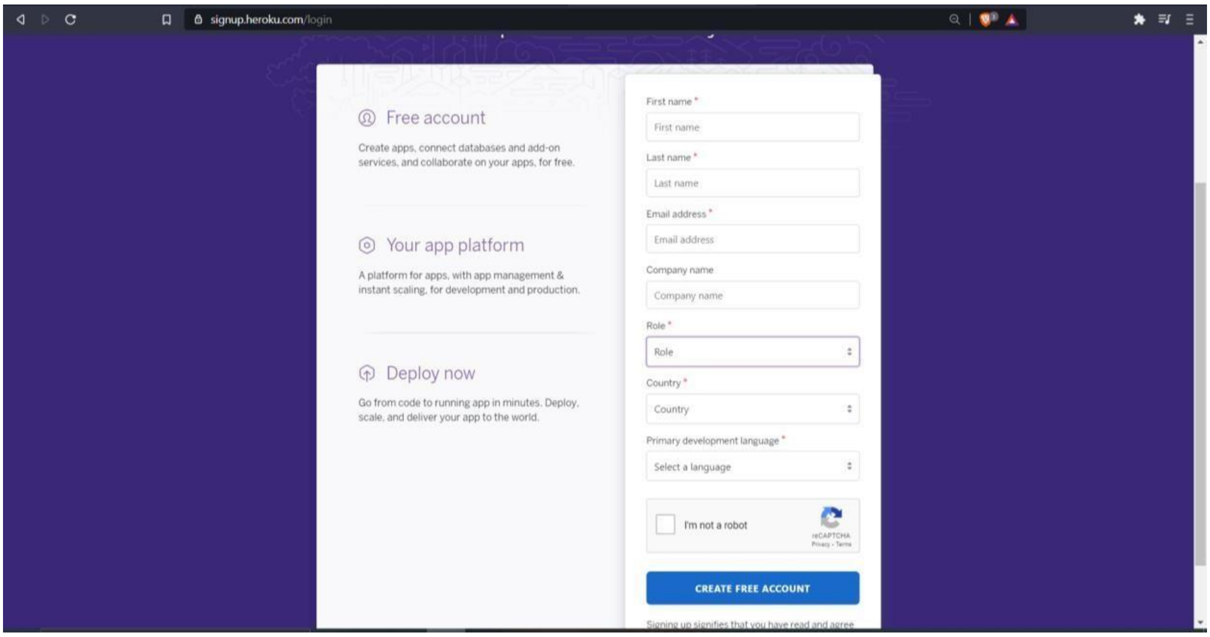
Think about what you want your customers to be able to do via your website. This will help you work out what sections or pages you want to include. Consider what information or transactions your customers will want and make sure the site is structured to make it easy for them to find and do the things they need.

- **Buildyourwebsite**

You can build your own website or have a professional web developerbuilditfor you. Websites need tobekept up to date, somakesure you plan for ongoing maintenance. You can use a website publishing packagetobuildyour own website. These are similartoword processors, butalsohaveinbuiltfeatures to convert your text and imagestoweb content and senditto yourwebsite.

Q3. Creating a cloudaccount

I have used Heroku as my cloud platform and to create an Herokuaccount visithttps://id.heroku.com/login



signup.heroku.com/login

Free account

Create apps, connect databases and add-on services, and collaborate on your apps, for free.

Your app platform

A platform for apps, with app management & instant scaling, for development and production.

Deploy now

Go from code to running app in minutes. Deploy, scale, and deliver your app to the world.

First name *
First name

Last name *
Last name

Email address *
Email address

Company name
Company name

Role *
Role

Country *
Country

Primary development language *
Select a language

□ I'm not a robot

CREATE FREE ACCOUNT

Signing up signifies that you have read and agree

You can create a free account by filling up the information and you are ready to use Heroku.

Cloud Service DesignLab

Experiment1:InstallationofUbuntu20.04LTSonVirtualMachineusingVirtualBoxinWindows10

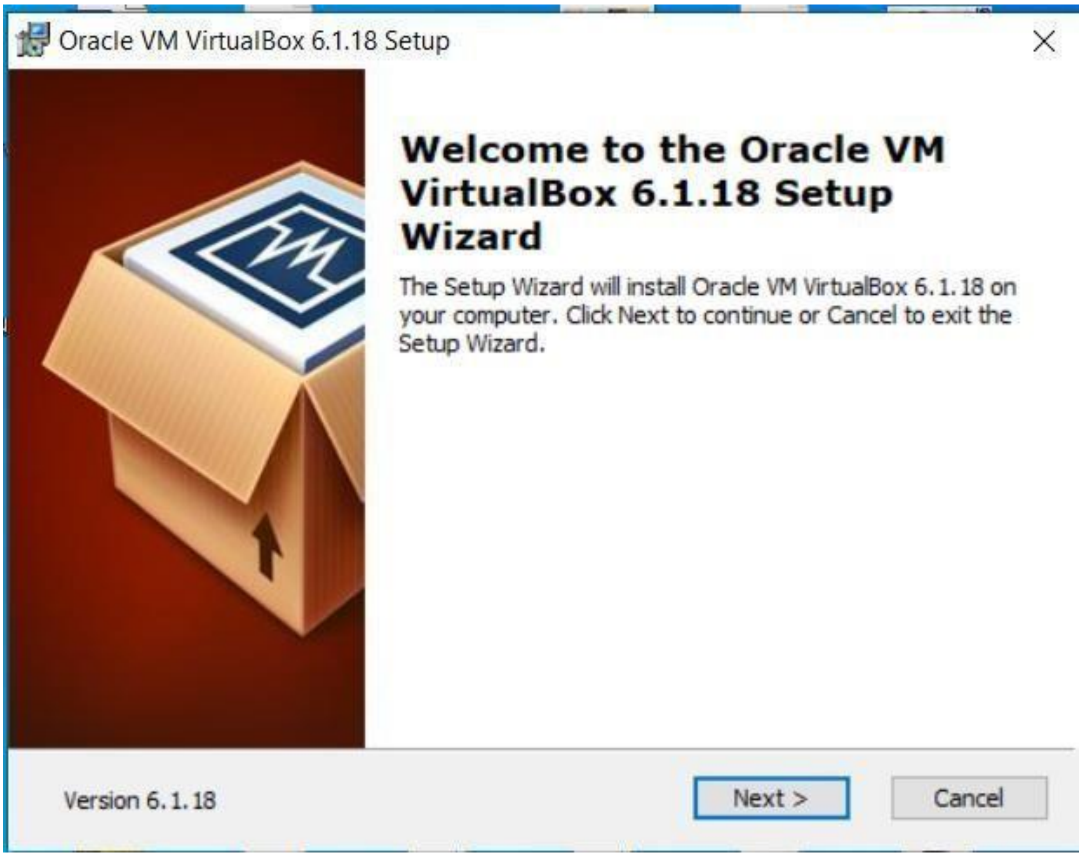
Date: 17/02/2021

Aim:IStoinstallVirtualBoxtoCreateVirtualMachinewithUbuntuOSinWindows10andenablecopyingoffilesfromHosttoVirtualMachineandBrowser

Procedure:

Installation of VirtualBox 6.1.18

1. Startoftheinstallationsetupfor VirtualBox



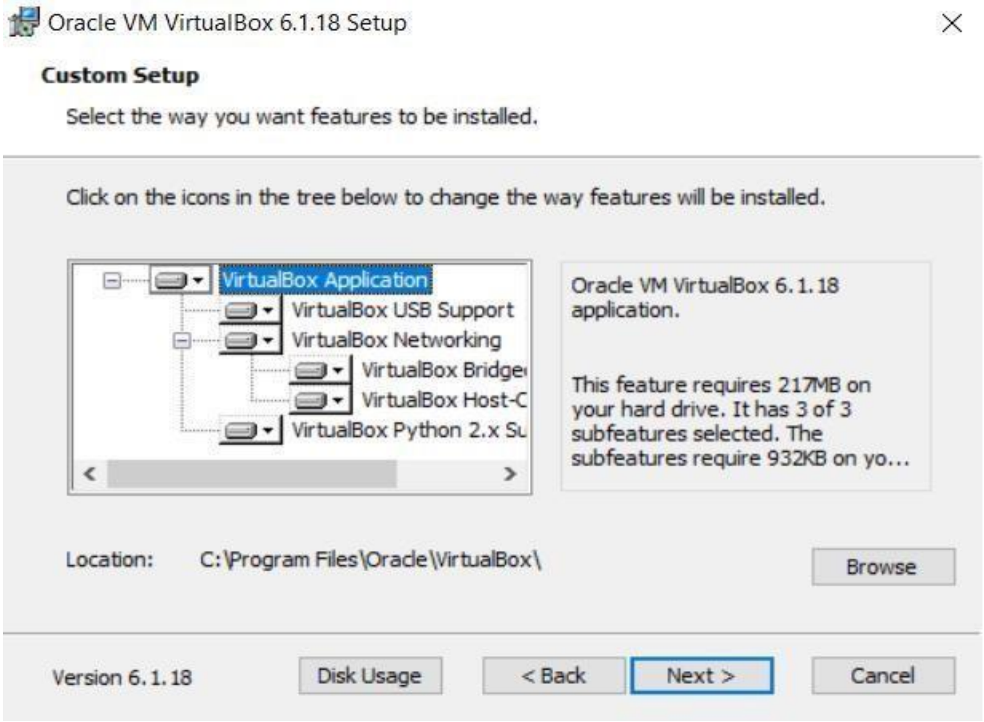
Oracle VM VirtualBox 6.1.18 Setup

Welcome to the Oracle VM VirtualBox 6.1.18 Setup Wizard

The Setup Wizard will install Oracle VM VirtualBox 6.1.18 on your computer. Click Next to continue or Cancel to exit the Setup Wizard.

Version 6.1.18

2. ProvidepathwheretheinstallationofVirtualBoxtakesplace.



Oracle VM VirtualBox 6.1.18 Setup

Custom Setup

Select the way you want features to be installed.

Click on the icons in the tree below to change the way features will be installed.

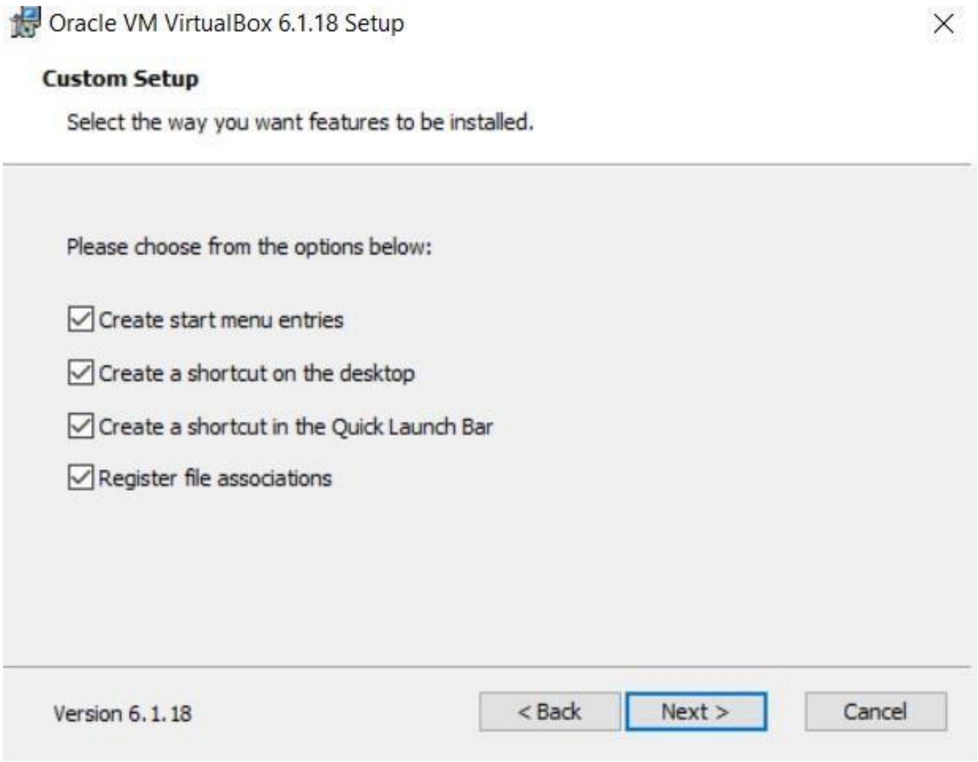
- VirtualBox Application
  - VirtualBox USB Support
  - VirtualBox Networking
    - VirtualBox Bridge
    - VirtualBox Host-C
  - VirtualBox Python 2.x Su

Oracle VM VirtualBox 6.1.18 application.

This feature requires 217MB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 932KB on yo...

Location: C:\Program Files\Oracle\VirtualBox\

3. Selectthefeaturesyouwantaswellasenableshortcutoptions



Oracle VM VirtualBox 6.1.18 Setup

Custom Setup

Select the way you want features to be installed.

Please choose from the options below:

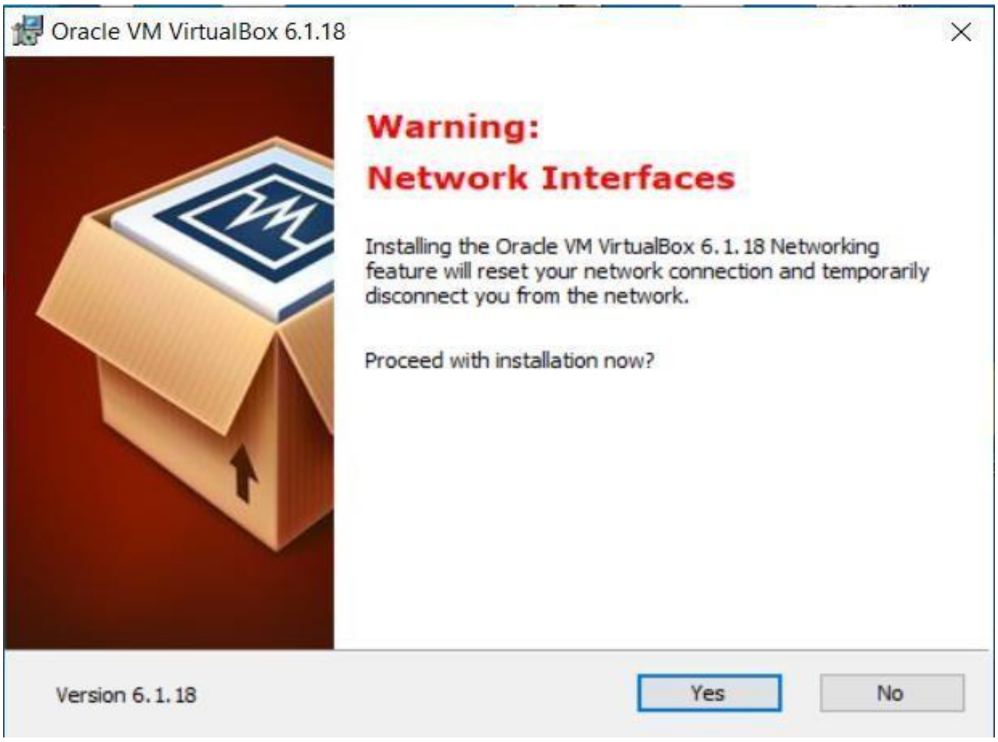
☑ Create start menu entries

☑ Create a shortcut on the desktop

☑ Create a shortcut in the Quick Launch Bar

☑ Register file associations

4. Permissionforinstallationaswellasresettingyounetworkconnection.



Oracle VM VirtualBox 6.1.18

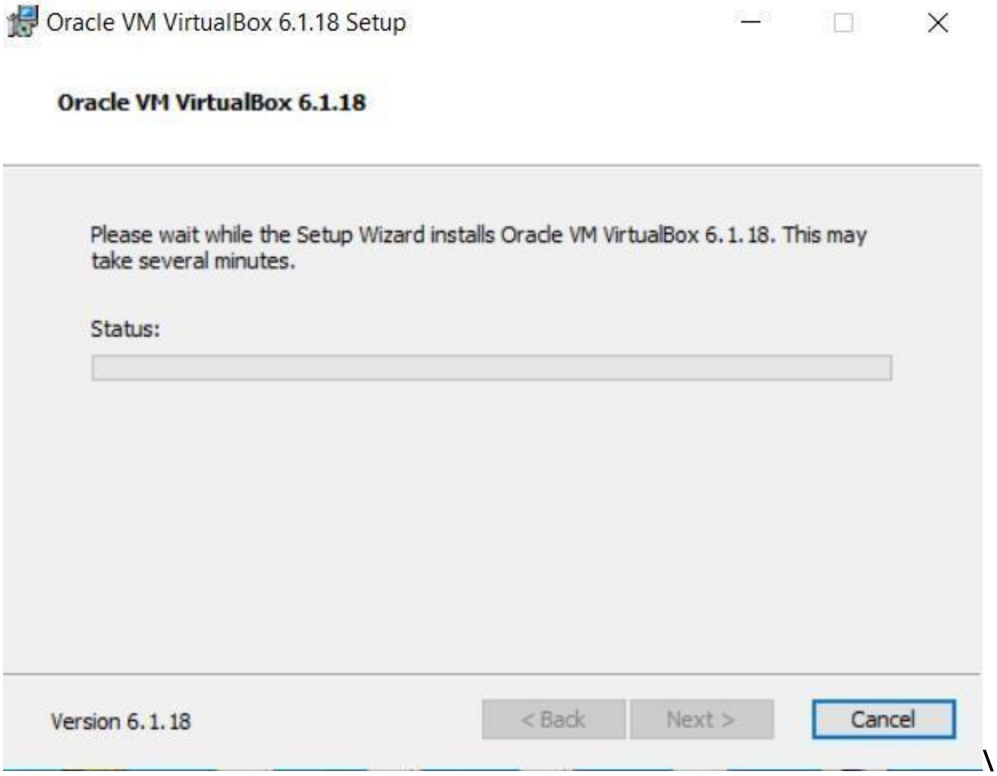
Warning:
Network Interfaces

Installing the Oracle VM VirtualBox 6.1.18 Networking feature will reset your network connection and temporarily disconnect you from the network.

Proceed with installation now?

Version 6.1.18

5. Anychangesinpreviouswindowscanbemadenowelsestartinstallation.



Oracle VM VirtualBox 6.1.18 Setup

Oracle VM VirtualBox 6.1.18

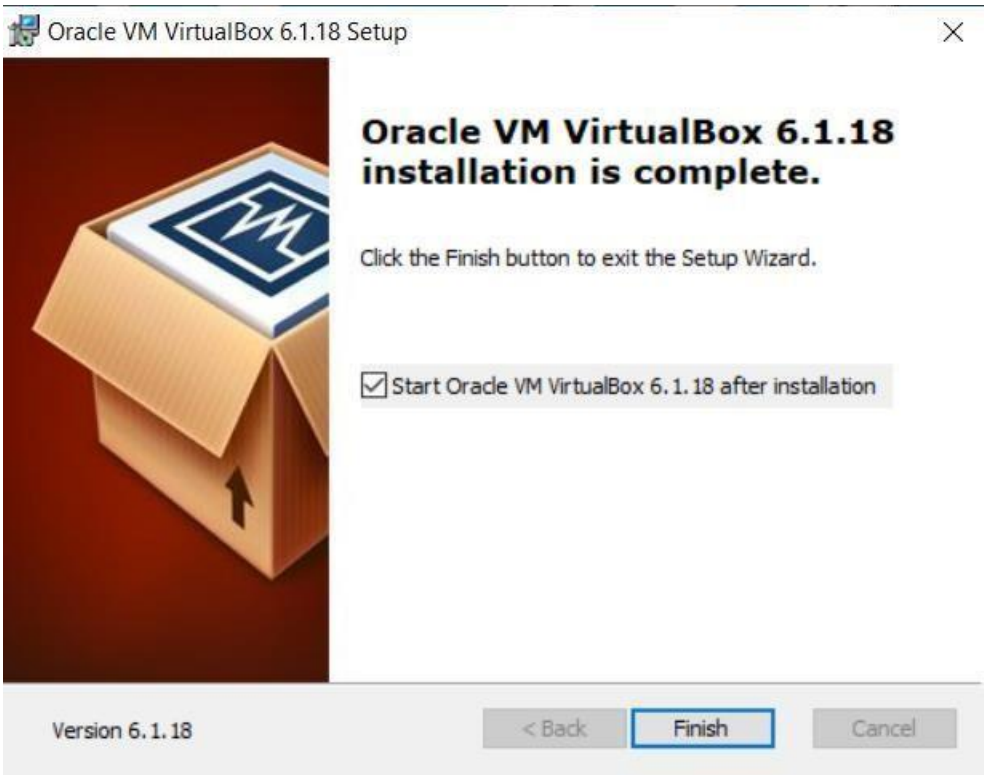
Please wait while the Setup Wizard installs Oracle VM VirtualBox 6.1.18. This may take several minutes.

Status:

Version 6.1.18

\

6. Completion of VirtualBox Installation



Oracle VM VirtualBox 6.1.18 Setup

Oracle VM VirtualBox 6.1.18 installation is complete.

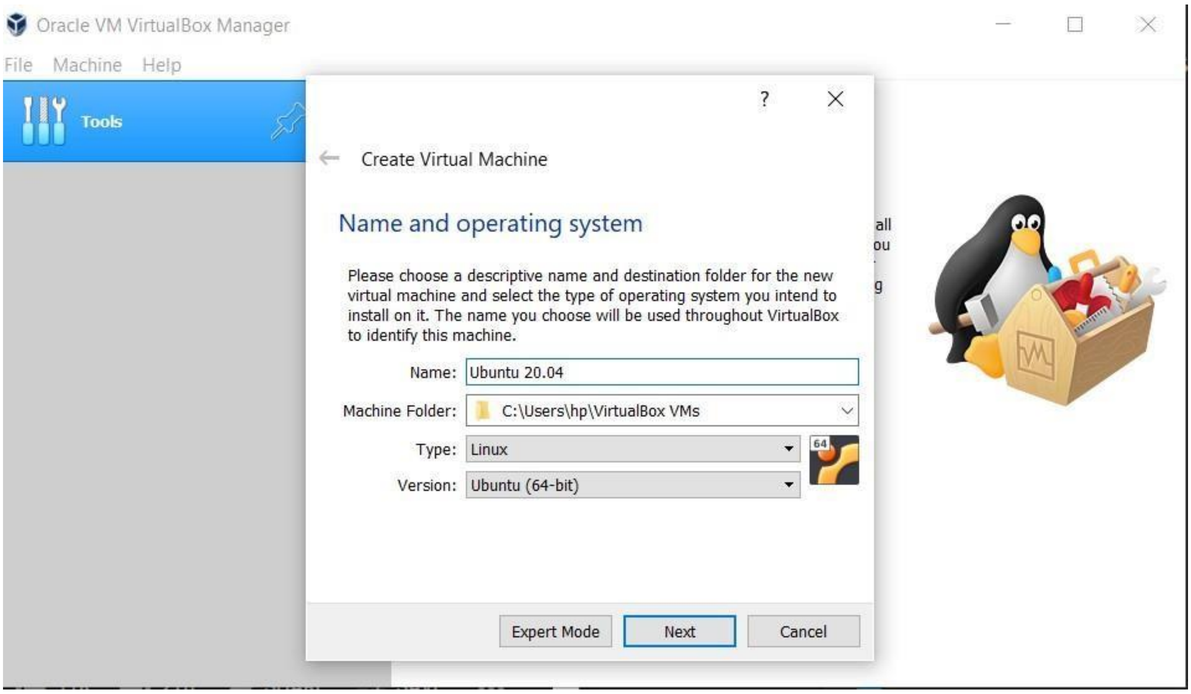
Click the Finish button to exit the Setup Wizard.

☑ Start Oracle VM VirtualBox 6.1.18 after installation

Version 6.1.18

Installation of Ubuntu 20.04 in VirtualBox

1. Enter name, location where the new virtual machine will be stored, type of operating system and version of operating system.



Create Virtual Machine

Name and operating system

Please choose a descriptive name and destination folder for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.

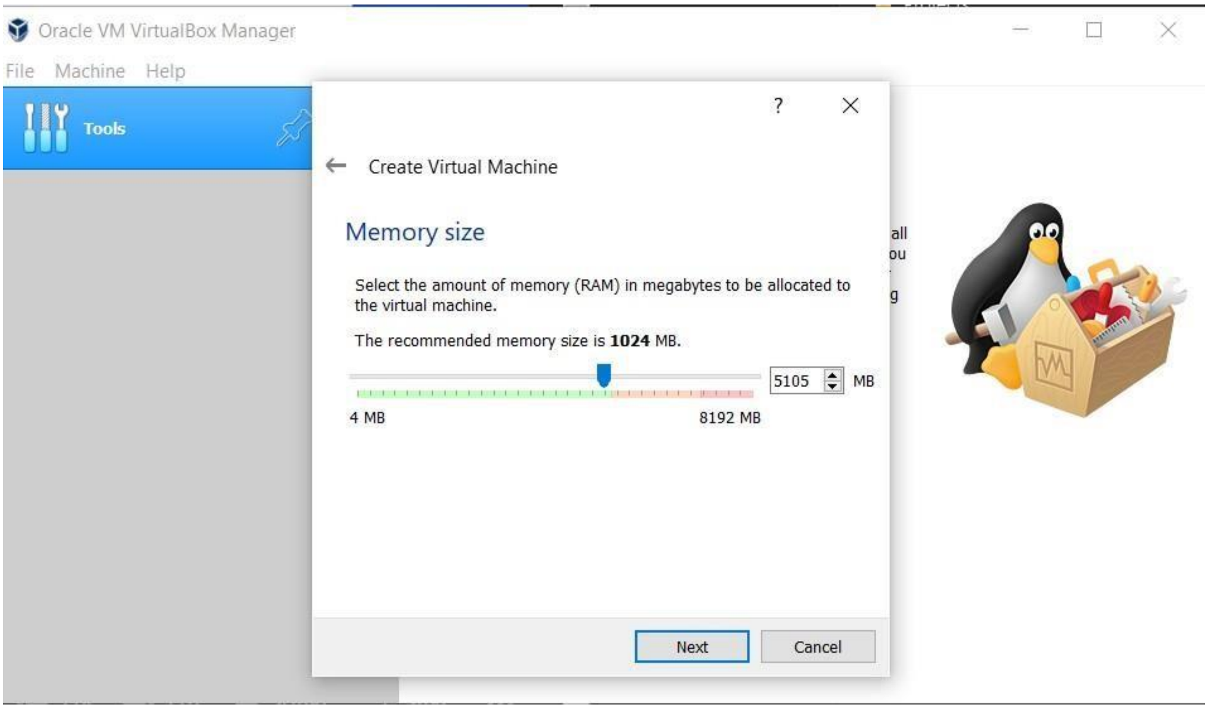
Name: Ubuntu 20.04

Machine Folder: C:\Users\hp\VirtualBox VMs

Type: Linux

Version: Ubuntu (64-bit)

2. Select RAM to be allocated to virtual machine.



Create Virtual Machine

Memory size

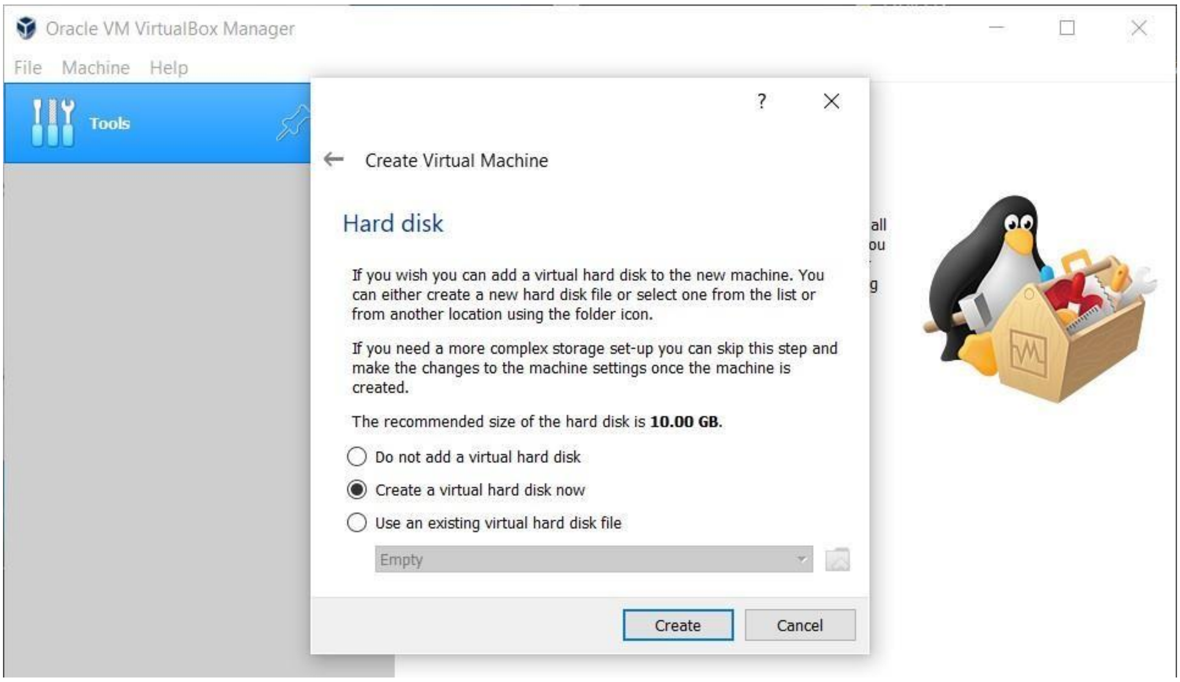
Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.

The recommended memory size is **1024** MB.

5105 MB

4 MB 8192 MB

3. This window provides option whether to create a virtual hard disk or to use the existing one.



Create Virtual Machine

Hard disk

If you wish you can add a virtual hard disk to the new machine. You can either create a new hard disk file or select one from the list or from another location using the folder icon.

If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.

The recommended size of the hard disk is **10.00 GB**.

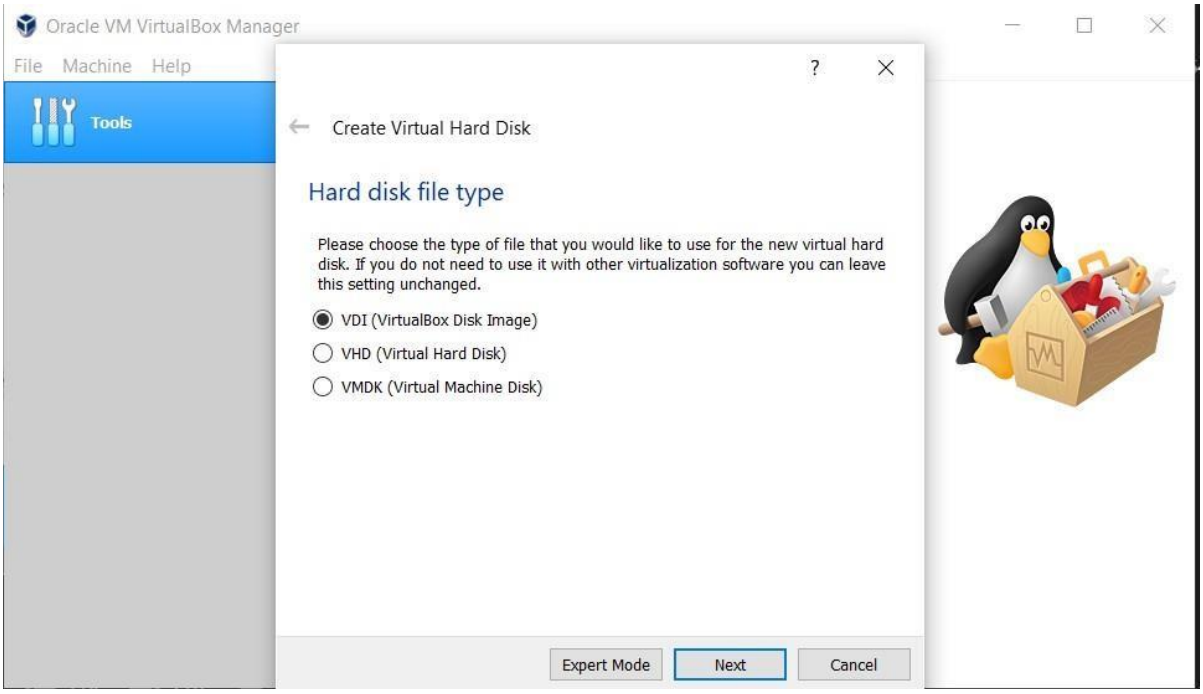
○ Do not add a virtual hard disk

● Create a virtual hard disk now

○ Use an existing virtual hard disk file

Empty

4. Selectharddisktypeyouwouldliketouse



Create Virtual Hard Disk

Hard disk file type

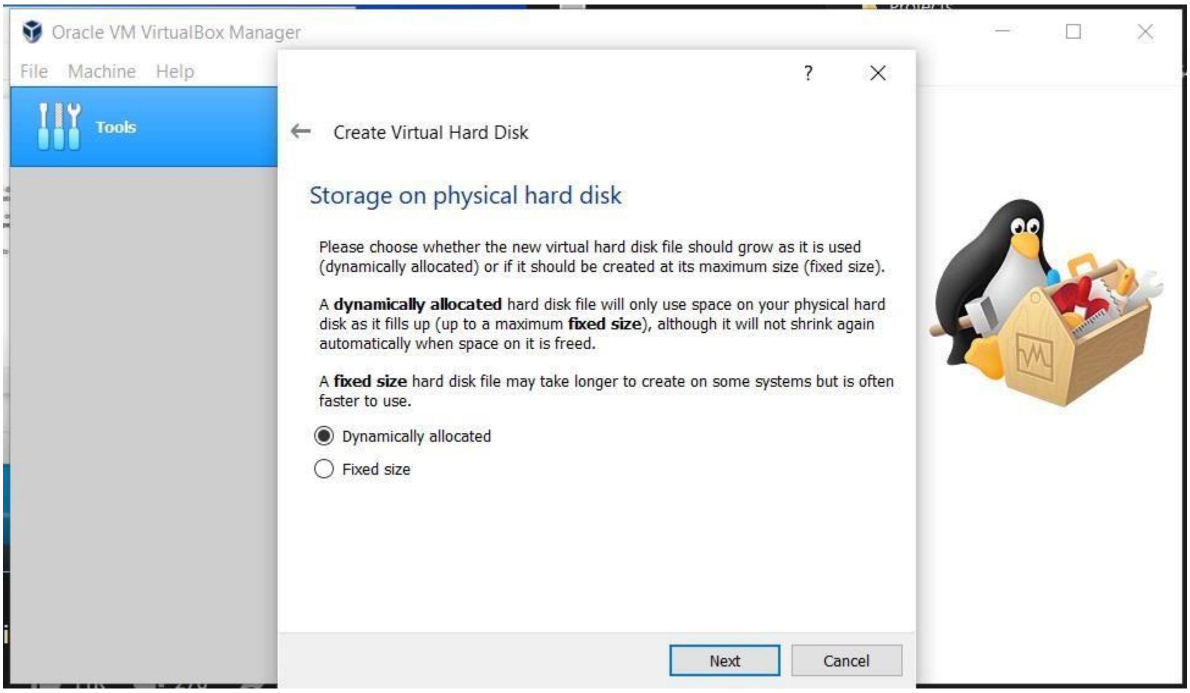
Please choose the type of file that you would like to use for the new virtual hard disk. If you do not need to use it with other virtualization software you can leave this setting unchanged.

● VDI (VirtualBox Disk Image)

○ VHD (Virtual Hard Disk)

○ VMDK (Virtual Machine Disk)

5. Choosevirtualharddiskshouldgrowdynamicallyorhavefixedsize



Create Virtual Hard Disk

Storage on physical hard disk

Please choose whether the new virtual hard disk file should grow as it is used (dynamically allocated) or if it should be created at its maximum size (fixed size).

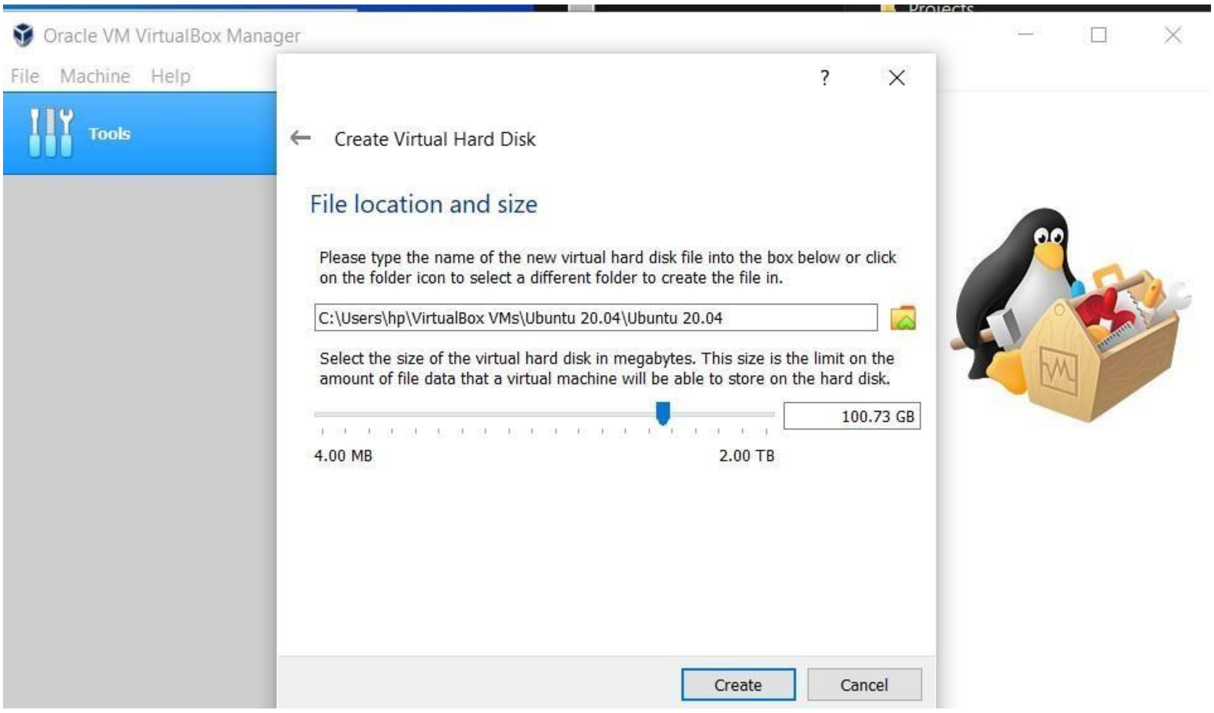
A **dynamically allocated** hard disk file will only use space on your physical hard disk as it fills up (up to a maximum **fixed size**), although it will not shrink again automatically when space on it is freed.

A **fixed size** hard disk file may take longer to create on some systems but is often faster to use.

● Dynamically allocated

○ Fixed size

6. Givethefilelocationforvirtualharddiskandsizeofvirtualharddisk.



File location and size

Please type the name of the new virtual hard disk file into the box below or click on the folder icon to select a different folder to create the file in.

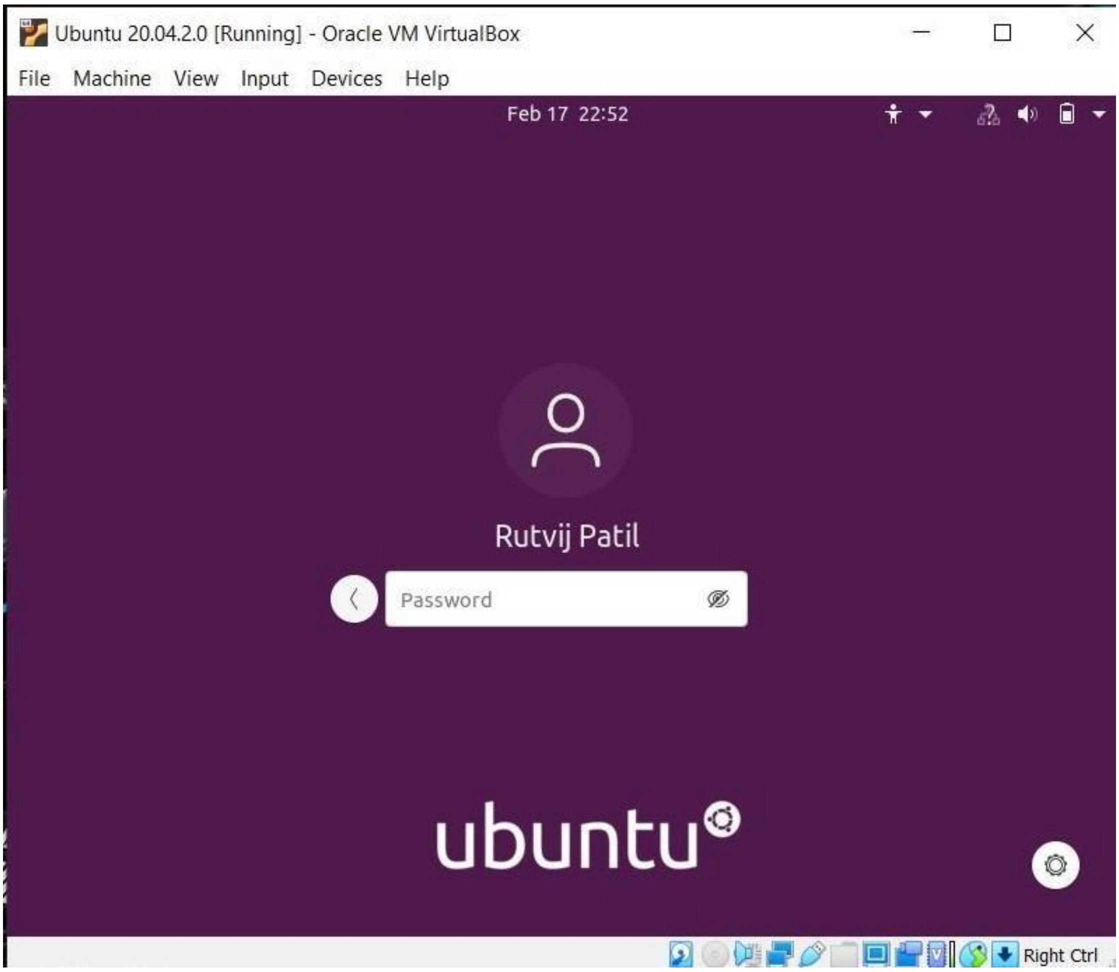
C:\Users\hp\VirtualBox VMs\Ubuntu 20.04\Ubuntu 20.04

Select the size of the virtual hard disk in megabytes. This size is the limit on the amount of file data that a virtual machine will be able to store on the hard disk.

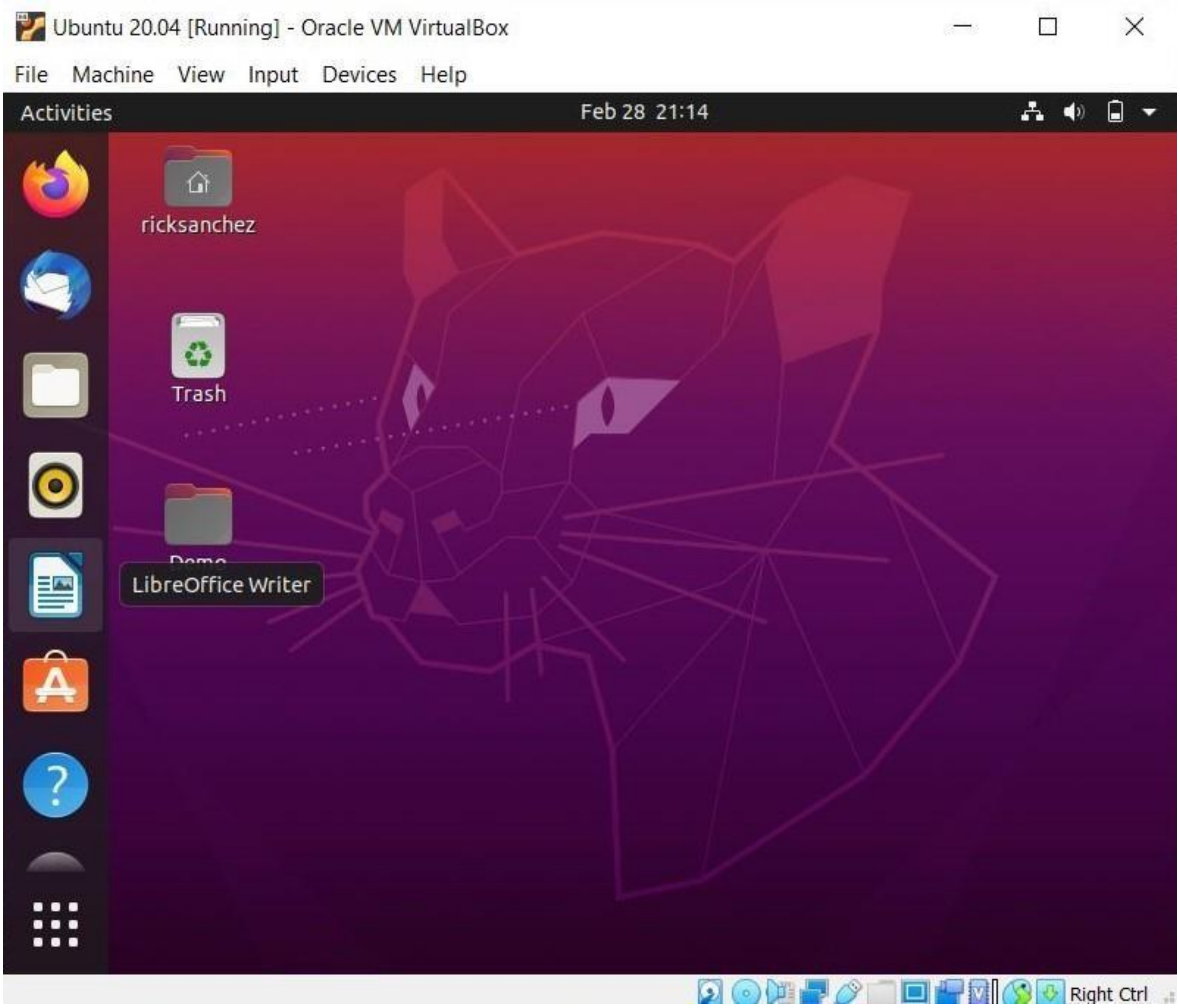
100.73 GB

4.00 MB 2.00 TB

Exercise 1



Ubuntu 20.04.2.0 [Running] - Oracle VM VirtualBox
File
Machine
View
Input
Devices
Help
Feb 17 22:52
Rutvij Patil
Password
ubuntu
Right Ctrl


Ubuntu 20.04 [Running] - Oracle VM VirtualBox
File
Machine
View
Input
Devices
Help
Activities
Feb 28 21:14
ricksanchez
Trash
Demo
LibreOffice Writer
Right Ctrl

Conclusion: From this experiment we have understood how to make a virtual machine,transfer files from host machine and virtual machine,mounting usb in virtual machine.

References:

1. https://www.youtube.com/watch?v=x5MhydijWmc

Experiment 2: Explore Cloud Service

Providers Objective: Is to remember the various service providers

online.

Aim: To understand how to install and configure 1. Ulteo 2. Open Stack / Own cloud

Procedure:

A)Ulteo intstallation steps:

1. Add the Ulteo repository to the repository list:sudo sh -c 'echo "debhttp://archive.ulteo.com/ovd/3.0/ubuntulucid main">>
   /etc/apt/sources.list.d/01-ulteo-ovd.list'
   sudo apt-get update

2. Install the keyring package to validate the repository using gpg:sudo apt-get installulteo-keyring
   sudo apt-get update

3. Install the ulteo-ovd-debconf-database package:sudo apt-get install ulteo-ovd-debconf-database

4. Install the ulteo-ovd-easy-install package:sudo apt-get installulteo-ovd-easy-install

5. Once done, you just have to restart the service:sudo /etc/init.d/ulteo-ovd-subsystem restart

B)Own cloud installation steps:

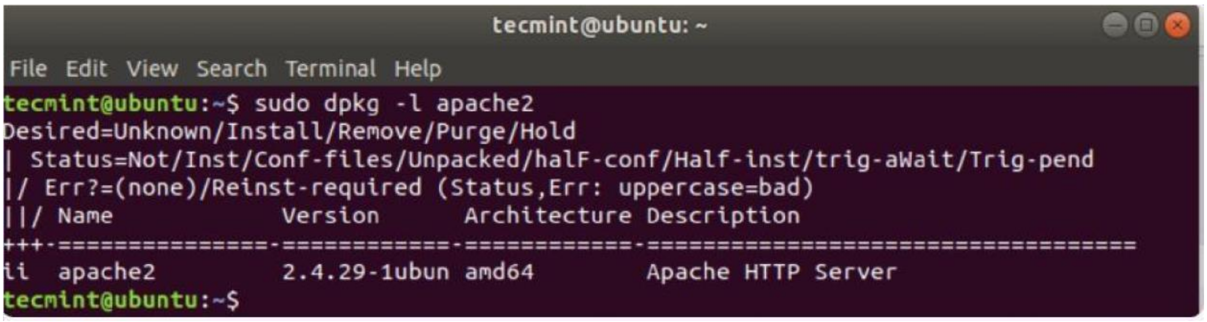
1. Update Ubuntu SystemPackages:
   Update the system packages and repositories using the following apt command $ sudo apt update -y && sudo apt upgrade -y

2. Install Apache and PHP 7.2 inUbuntu:

   $ sudo apt install apache2 libapache2-mod-php7.2 openssl php-imagick php7.2common php7.2-curl php7.2-gd php7.2-imap php7.2-intl php7.2-json php7.2-ldap php7.2-mbstring php7.2-mysql php7.2-pgsql php-smbclient phpssh2 php7.2-sqlite3 php7.2-xml php7.2-zip

Once the installation is complete you can verify if Apache is installed by running the dpkg command:

```
$ sudo dpkg -l apache2
```



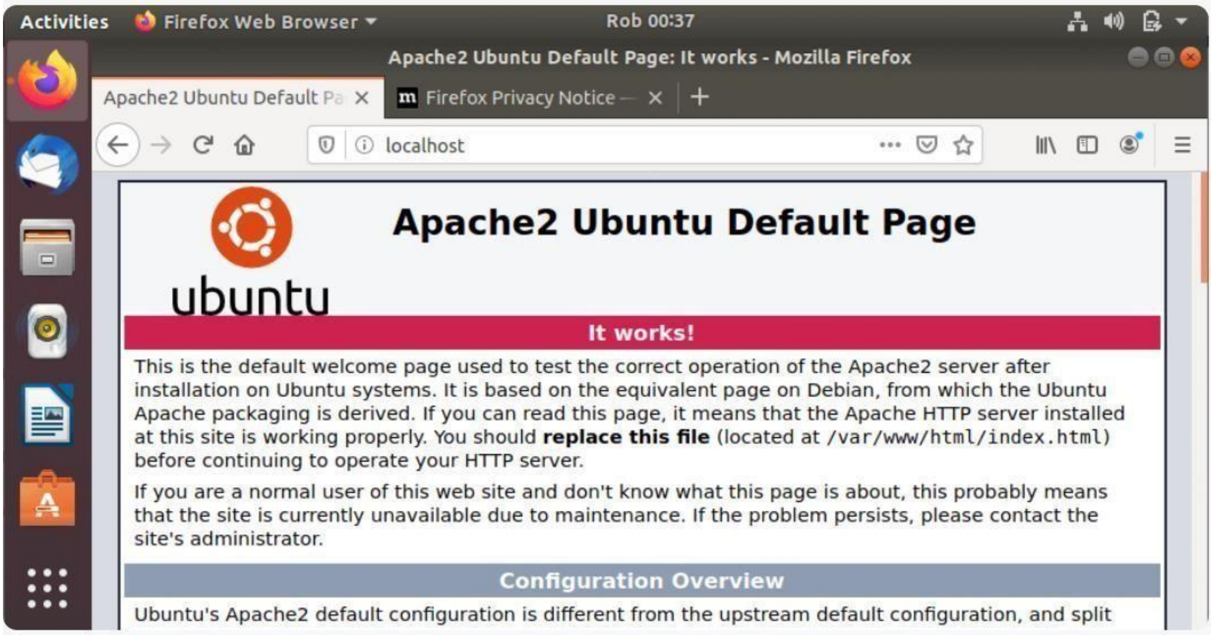
```
tecmint@ubuntu:~$ sudo dpkg -l apache2
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name           Version      Architecture Description
+++-==============-============-============-=================================
ii  apache2        2.4.29-1ubun amd64        Apache HTTP Server
tecmint@ubuntu:~$
```

To start and enable Apache to run on boot, run the commands.

$ sudo systemctl start apache2

$ sudo systemctl enable apache2

Now head over to your browser and*type in your server's IP address in the*URLbar as shown:http://server-IP



Activities
Firefox Web Browser
Rob 00:37
Apache2 Ubuntu Default Page: It works - Mozilla Firefox
Apache2 Ubuntu Default Pa
Firefox Privacy Notice —
localhost
ubuntu

Apache2 Ubuntu Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split

Verify Apache Page in Ubuntu

To check if*PHP*is installed.

$ php -v

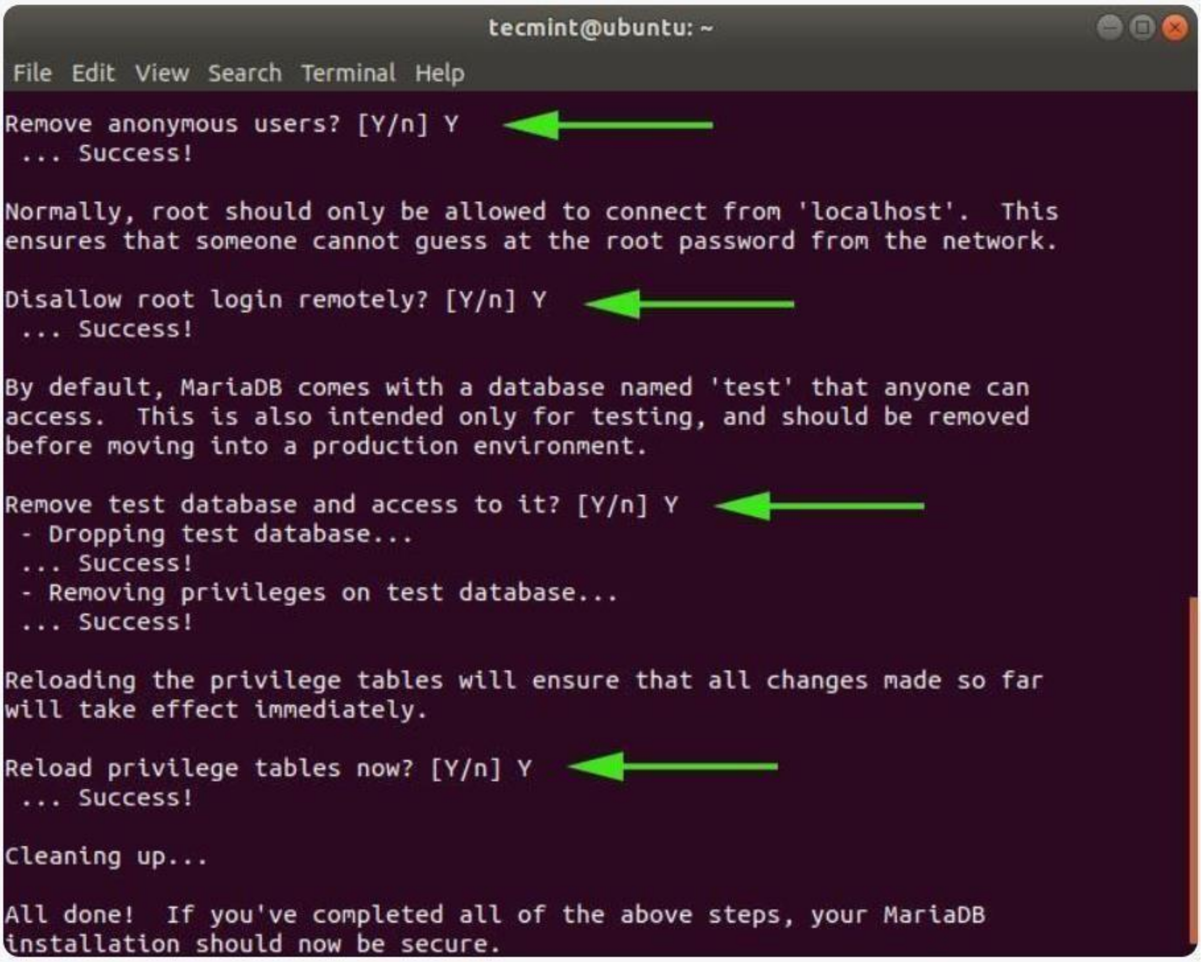
3. Install MariaDB in Ubuntu To install*the MariaDBrun.*

$ sudo apt install mariadb-server

To get started with securing your MySQL server, run the command: $

sudo mysql_secure_installation

*For the remaining prompts, simply type 'Y' and hit**ENTER**.*



```
Remove anonymous users? [Y/n] Y
 ... Success!

Normally, root should only be allowed to connect from 'localhost'.  This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] Y
 ... Success!

By default, MariaDB comes with a database named 'test' that anyone can
access.  This is also intended only for testing, and should be removed
before moving into a production environment.

Remove test database and access to it? [Y/n] Y
 - Dropping test database...
 ... Success!
 - Removing privileges on test database...
 ... Success!

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] Y
 ... Success!

Cleaning up...

All done!  If you've completed all of the above steps, your MariaDB
installation should now be secure.
```

4. Install PHP modules required by owncloud

   sudo apt install -y php-imagick php-common php-curl php-gd php-imap php-intl phpjson php-mbstring php-mysql php-ssh2 php-xml php-zip php-apcu php-redis redisserver

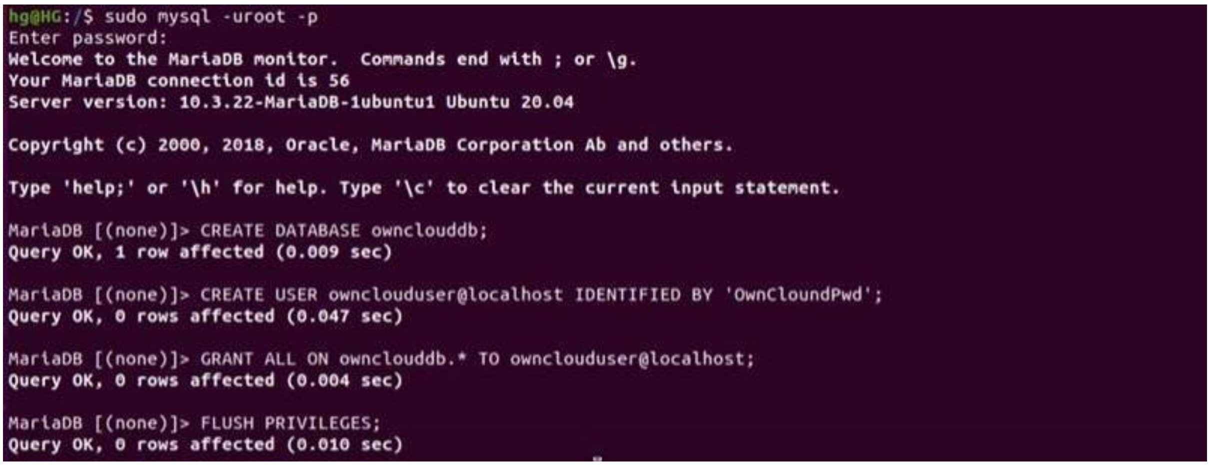
5. Login to Mysql : mysql -u root-p

6. CREATE DATABASEownclouddb;

7. CREATE USER ownclouduser@localhost IDENTIFIED BY'OwnCloundPwd';

8. GRANT ALL ON ownclouddb.* TOownclouduser@localhost;

9. FLUSHPRIVILEGES;

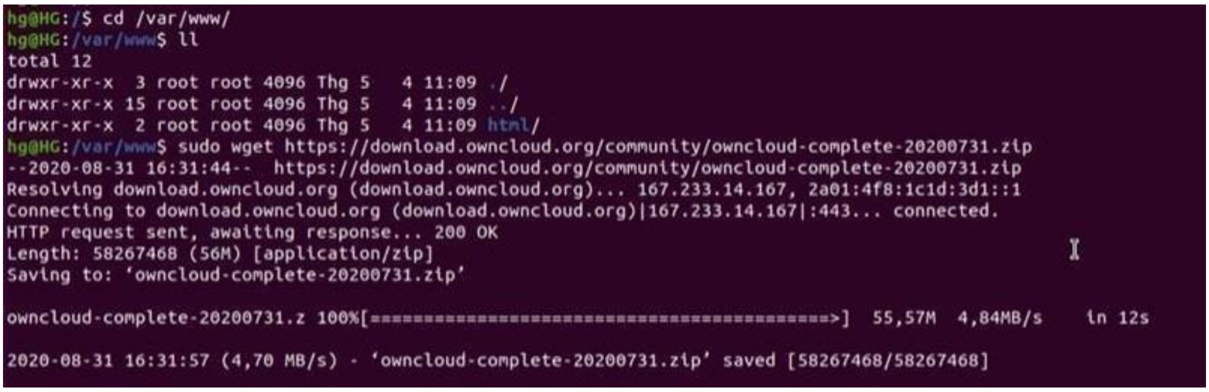


```
hg@HG:/$ sudo mysql -uroot -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 56
Server version: 10.3.22-MariaDB-1ubuntu1 Ubuntu 20.04

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> CREATE DATABASE ownclouddb;
Query OK, 1 row affected (0.009 sec)

MariaDB [(none)]> CREATE USER ownclouduser@localhost IDENTIFIED BY 'OwnCloundPwd';
Query OK, 0 rows affected (0.047 sec)

MariaDB [(none)]> GRANT ALL ON ownclouddb.* TO ownclouduser@localhost;
Query OK, 0 rows affected (0.004 sec)

MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.010 sec)
```

10. Go to /var/wwwdirectory

11. Download owncloud using this Link :https://owncloud.com/download-server/

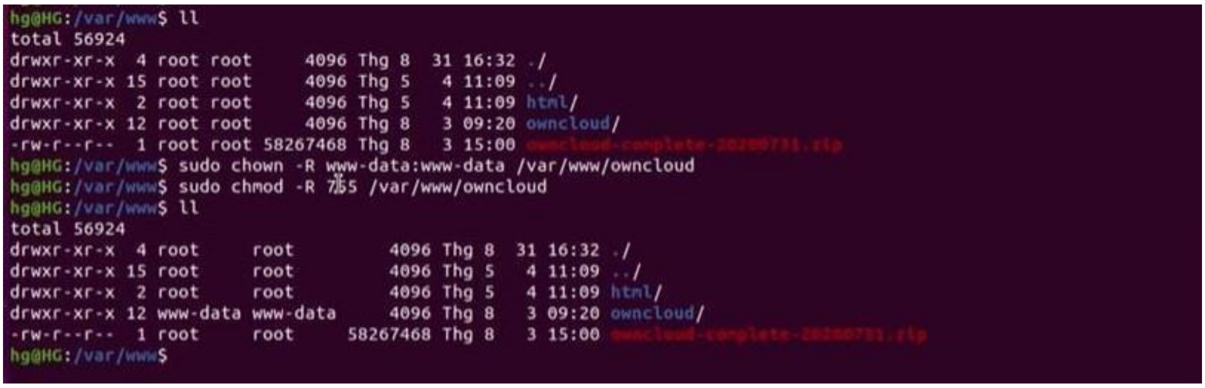
12. Copy link address and paste after sudowget



```
hg@HG:/$ cd /var/www/
hg@HG:/var/www$ ll
total 12
drwxr-xr-x  3 root root 4096 Thg 5   4 11:09 ./
drwxr-xr-x 15 root root 4096 Thg 5   4 11:09 ../
drwxr-xr-x  2 root root 4096 Thg 5   4 11:09 html/
hg@HG:/var/www$ sudo wget https://download.owncloud.org/community/owncloud-complete-20200731.zip
--2020-08-31 16:31:44--  https://download.owncloud.org/community/owncloud-complete-20200731.zip
Resolving download.owncloud.org (download.owncloud.org)... 167.233.14.167, 2a01:4f8:1c1d:3d1::1
Connecting to download.owncloud.org (download.owncloud.org)|167.233.14.167|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 58267468 (56M) [application/zip]
Saving to: ‘owncloud-complete-20200731.zip’

owncloud-complete-20200731.z 100%[=========================================>]  55,57M  4,84MB/s    in 12s

2020-08-31 16:31:57 (4,70 MB/s) - ‘owncloud-complete-20200731.zip’ saved [58267468/58267468]
```

13. Unzip thefile

14. Give some permissions to own clouddirectory



```
hg@HG:/var/www$ ll
total 56924
drwxr-xr-x  4 root root     4096 Thg 8  31 16:32 ./
drwxr-xr-x 15 root root     4096 Thg 5   4 11:09 ../
drwxr-xr-x  2 root root     4096 Thg 5   4 11:09 html/
drwxr-xr-x 12 root root     4096 Thg 8   3 09:20 owncloud/
-rw-r--r--  1 root root 58267468 Thg 8   3 15:00 owncloud-complete-20200731.zip
hg@HG:/var/www$ sudo chown -R www-data:www-data /var/www/owncloud
hg@HG:/var/www$ sudo chmod -R 755 /var/www/owncloud
hg@HG:/var/www$ ll
total 56924
drwxr-xr-x  4 root     root         4096 Thg 8  31 16:32 ./
drwxr-xr-x 15 root     root         4096 Thg 5   4 11:09 ../
drwxr-xr-x  2 root     root         4096 Thg 5   4 11:09 html/
drwxr-xr-x 12 www-data www-data     4096 Thg 8   3 09:20 owncloud/
-rw-r--r--  1 root     root     58267468 Thg 8   3 15:00 owncloud-complete-20200731.zip
hg@HG:/var/www$
```

15. Create new file and add content sudo vim /etc/apache2/conf-available/owncloud.conf

    Alias /owncloud"/var/www/owncloud/"

<Directory /var/www/owncloud/>

a. Options+FollowSymlinks

b. AllowOverrideAll

c. <IfModulemod_dav.c>

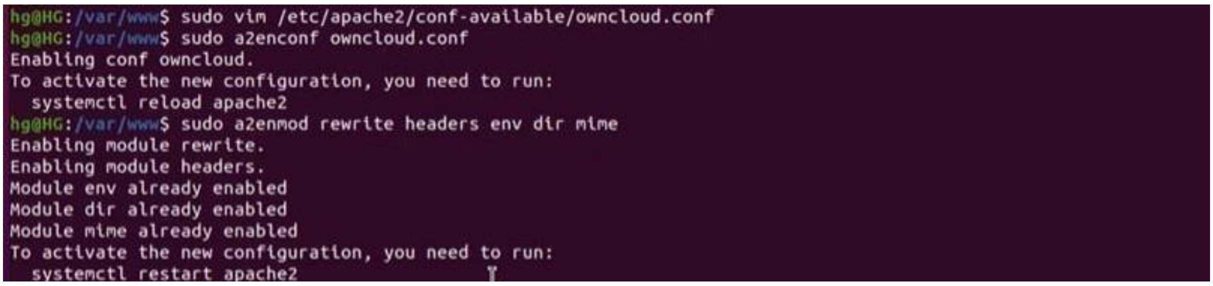
i. Davoff

d. </IfModule>

e. SetEnv HOME/var/www/owncloud

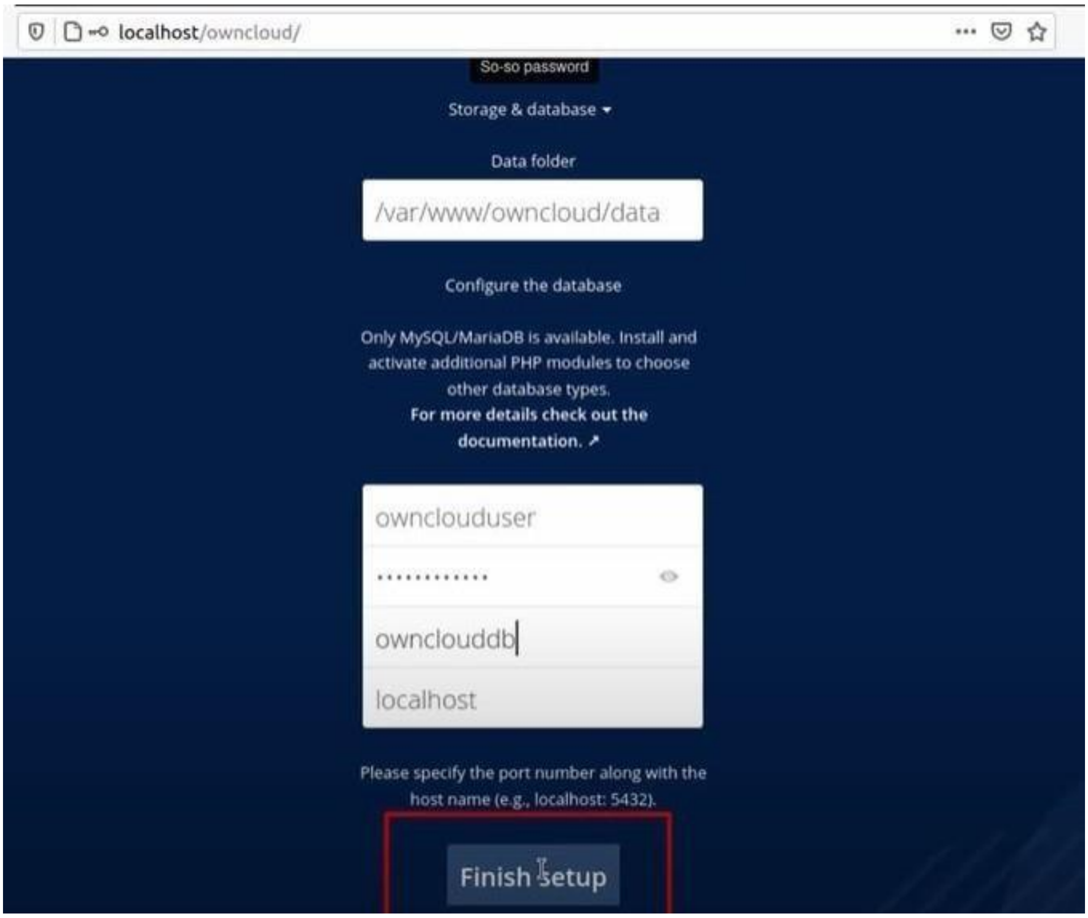
f. SetEnv HTTP_HOME /var/www/owncloud</Directory>

16. Enable required apache modules - sudo a2enconf owncloud.conf sudo a2enmod rewrite headers env dirmime



```
hg@HG:/var/www$ sudo vim /etc/apache2/conf-available/owncloud.conf
hg@HG:/var/www$ sudo a2enconf owncloud.conf
Enabling conf owncloud.
To activate the new configuration, you need to run:
  systemctl reload apache2
hg@HG:/var/www$ sudo a2enmod rewrite headers env dir mime
Enabling module rewrite.
Enabling module headers.
Module env already enabled
Module dir already enabled
Module mime already enabled
To activate the new configuration, you need to run:
  systemctl restart apache2
```

17. Restart Apache and sql
18. Go tohttps://localhost/owncloudand create a newaccount
19. Enter database user and password and databasename.
20. Click on finish setup.



localhost/owncloud/

So-so password

Storage & database

Data folder

/var/www/owncloud/data

Configure the database

Only MySQL/MariaDB is available. Install and activate additional PHP modules to choose other database types.
For more details check out the documentation. ↗

owncloudusers

••••••••••••

owncloudb

localhost

Please specify the port number along with the host name (e.g., localhost: 5432).

Finish setup

Conclusion:The steps for installing the Ulteo open virtual desktop has been understood and listed in order. The steps for installing and setting up the own cloud has been listed and verified.

Reference:

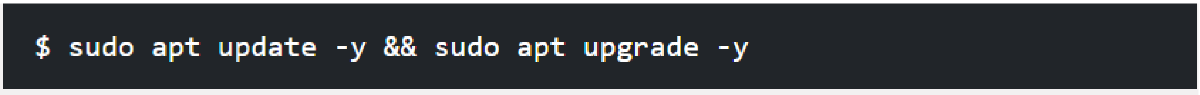
1) Ulteo :http://doc.ulteo.com/latest/Easy_Installation.html#sm
2) Own cloud :https://www.youtube.com/watch?v=LV4GigQaNbA

Experiment 3

Aim: To host OwnCloud (Part of Assignment 1) and Software as a Service hosting through any cloud service provider (part of Assignment 2)

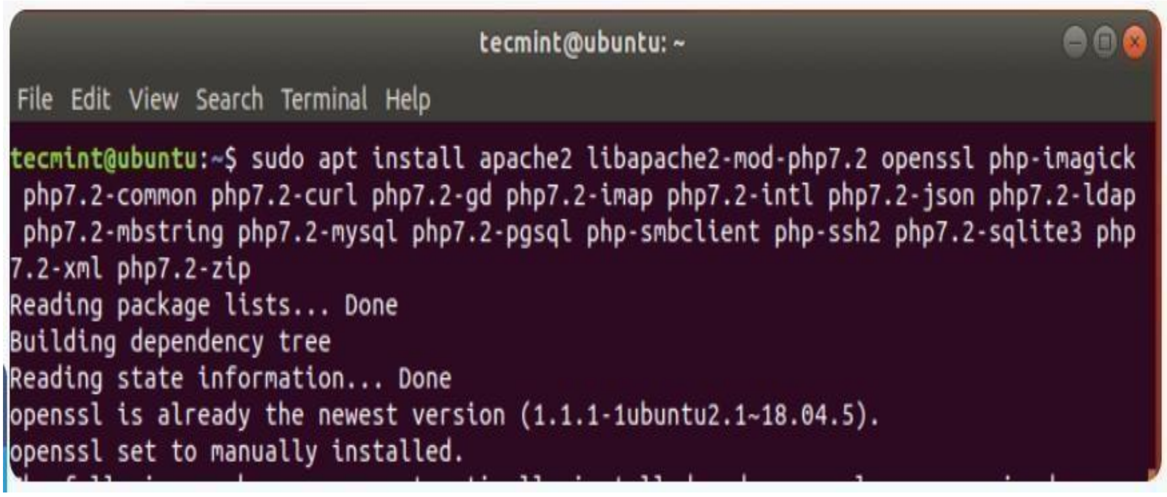
InstallationandConfigurationofOwnCloud

1. Update Ubuntusystempackages



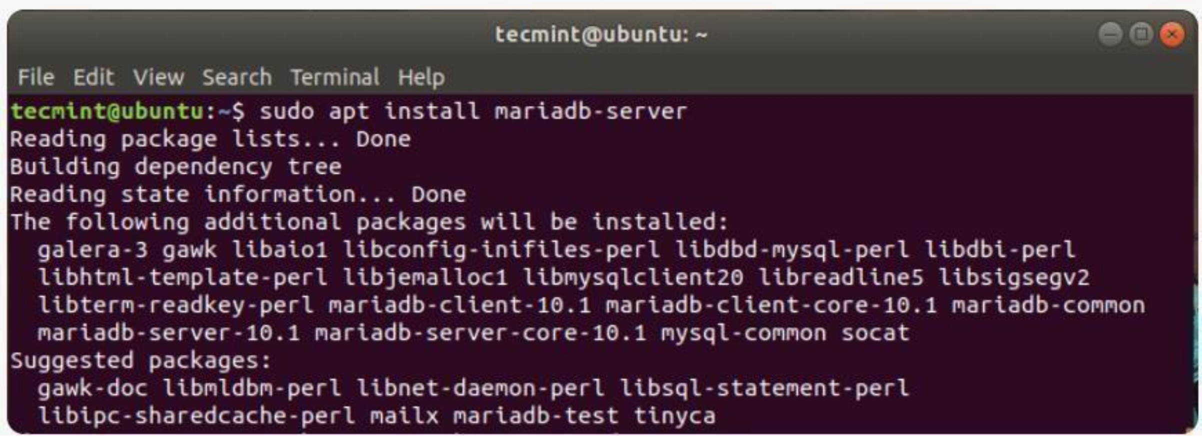
```
$ sudo apt update -y && sudo apt upgrade -y
```

2. InstallApacheandPHP7.2inUbuntu



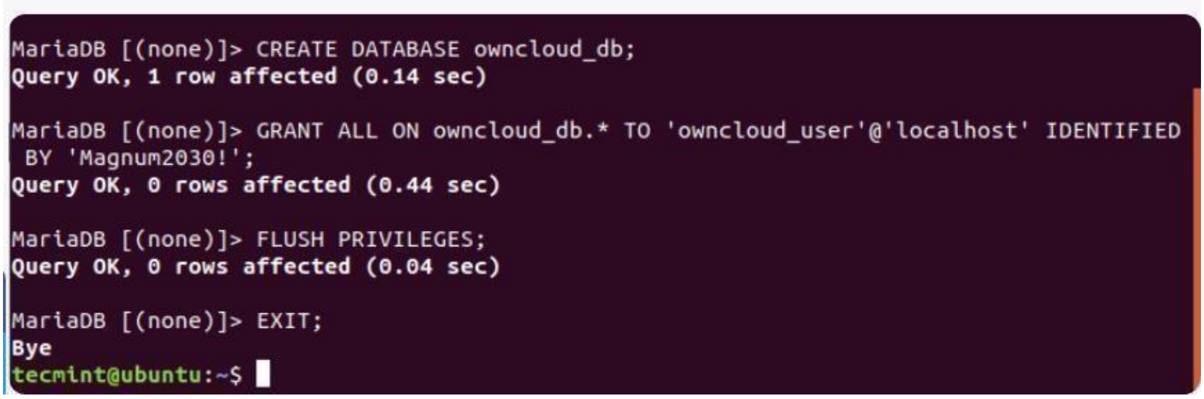
```
tecmint@ubuntu:~$ sudo apt install apache2 libapache2-mod-php7.2 openssl php-imagick
 php7.2-common php7.2-curl php7.2-gd php7.2-imap php7.2-intl php7.2-json php7.2-ldap
 php7.2-mbstring php7.2-mysql php7.2-pgsql php-smbclient php-ssh2 php7.2-sqlite3 php
7.2-xml php7.2-zip
Reading package lists... Done
Building dependency tree
Reading state information... Done
openssl is already the newest version (1.1.1-1ubuntu2.1~18.04.5).
openssl set to manually installed.
```

3. Install MariaDBinUbuntu



```
tecmint@ubuntu:~$ sudo apt install mariadb-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  galera-3 gawk libaio1 libconfig-inifiles-perl libdbd-mysql-perl libdbi-perl
  libhtml-template-perl libjemalloc1 libmysqlclient20 libreadline5 libsigsegv2
  libterm-readkey-perl mariadb-client-10.1 mariadb-client-core-10.1 mariadb-common
  mariadb-server-10.1 mariadb-server-core-10.1 mysql-common socat
Suggested packages:
  gawk-doc libmldbm-perl libnet-daemon-perl libsql-statement-perl
  libipc-sharedcache-perl mailx mariadb-test tinyca
```

4. CreateanOwnCloudDatabase



```
MariaDB [(none)]> CREATE DATABASE owncloud_db;
Query OK, 1 row affected (0.14 sec)

MariaDB [(none)]> GRANT ALL ON owncloud_db.* TO 'owncloud_user'@'localhost' IDENTIFIED
 BY 'Magnum2030!';
Query OK, 0 rows affected (0.44 sec)

MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.04 sec)

MariaDB [(none)]> EXIT;
Bye
tecmint@ubuntu:~$ 
```

5. DownloadOwnCloudinUbuntu

```
$ sudo wget
https://download.owncloud.org/community/owncloud-
10.4.0.zip
```

Once downloaded, unzip the zipped package to the `/var/www/` directory.

```
$      unzip  owncloud-          -  /var/www/
sudo          10.4.0.zip         d
```

6. ConfigureApacheforOwnCloud

```
$ sudo vim /etc/apache2/conf-available/owncloud.conf
```

Add the configuration below.

7. Enable all the required Apache modules and the newly added configuration by running the commandsbelow

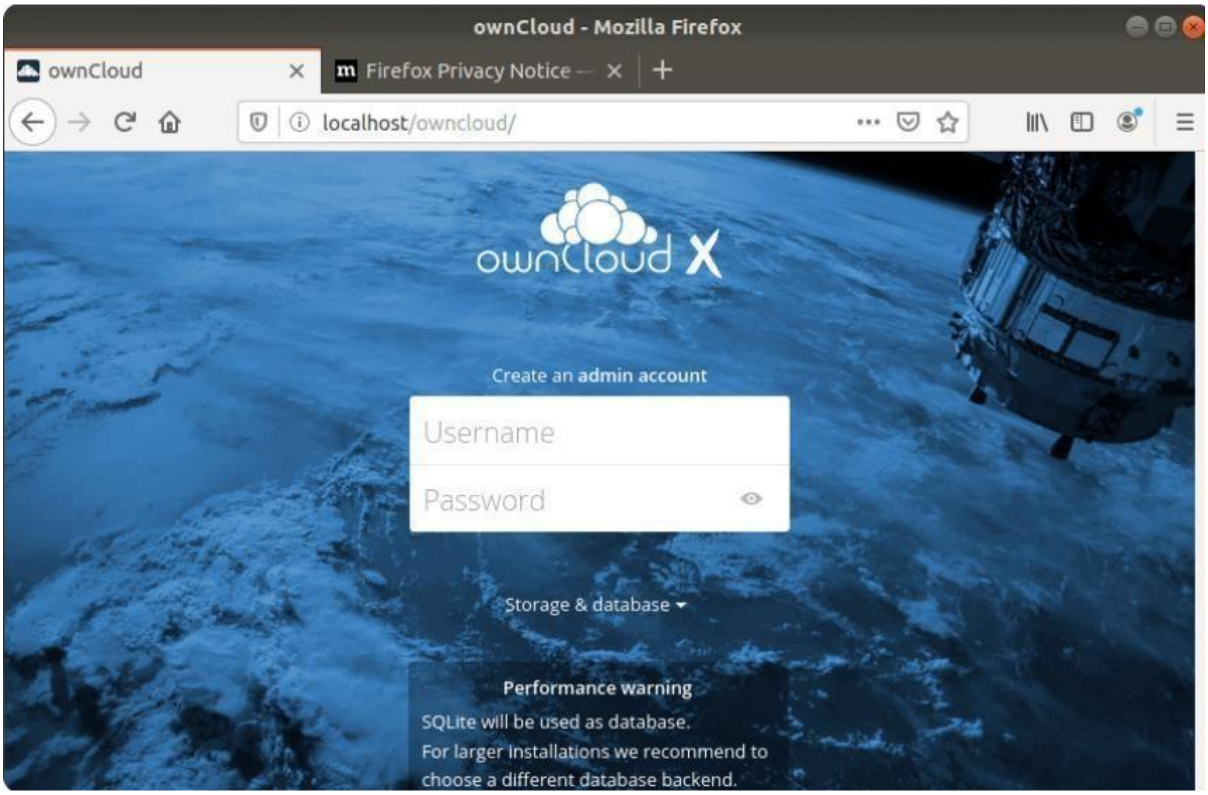
```
$ sudo a2enconf owncloud

$ sudo a2enmod rewrite

$ sudo a2enmod headers

$ sudo a2enmod env

$ sudo a2enmod dir

$ sudo a2enmod mime
```

8. For the changes to come into effect restart the Apachewebserver.

```
$      systemctl  restart  apache2
sudo
```

9. FinalizingtheOwnCloudInstallationInUbuntu

```
10. http://server-IP/owncloud
```



ownCloud - Mozilla Firefox

localhost/owncloud/

Create an admin account

Username

Password

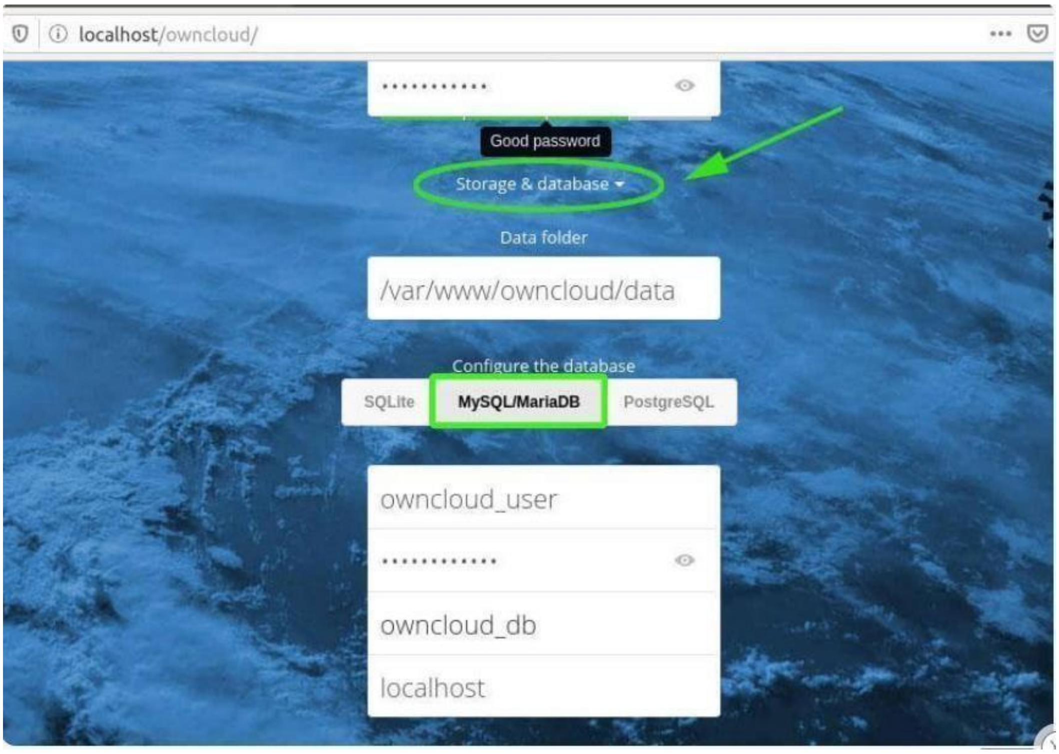
Storage & database

Performance warning

SQLite will be used as database.

For larger installations we recommend to choose a different database backend.

11. Just below, click on ‘**Storage and database**’. Select ‘**MySQL / MariaDB**’ under the ‘**configure the database**’ section and fill in the database credentials that you defined whilst creating the database for OwnCloud i.e database user, password of the database user, & databasename.



localhost/owncloud/

Good password

Storage & database

Data folder

/var/www/owncloud/data

Configure the database

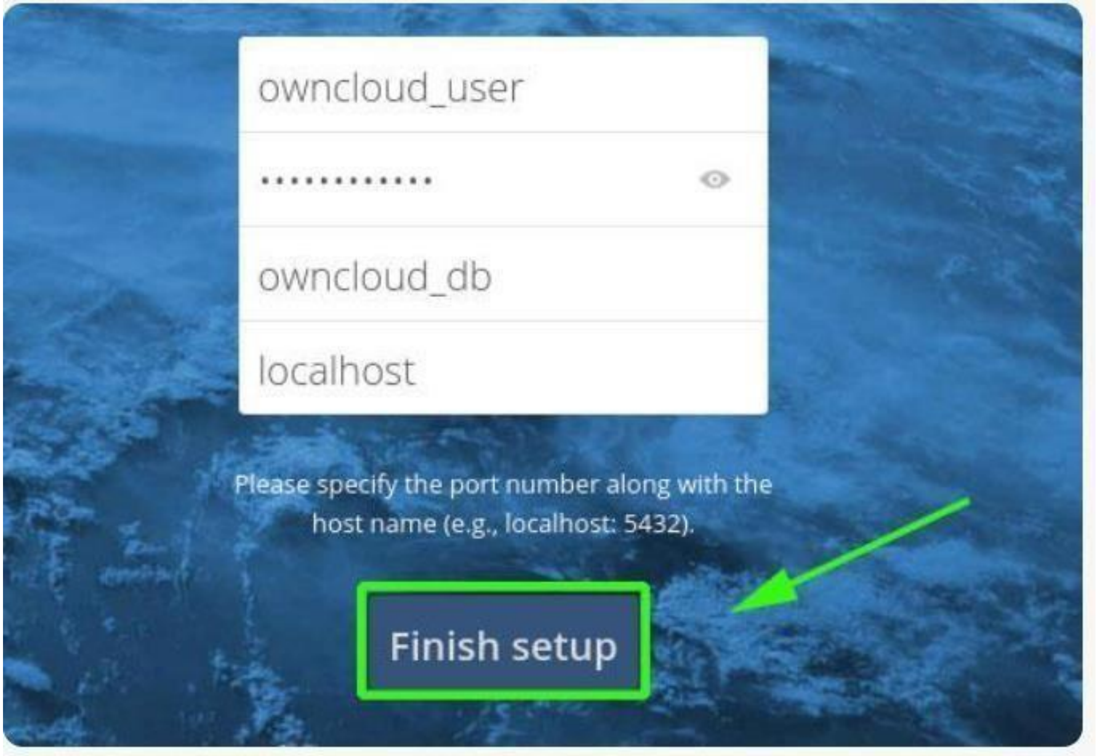
SQLite | MySQL/MariaDB | PostgreSQL

owncloud_user

owncloud_db

localhost

12. Finally, click ‘**Finish setup**’ to wind up setting upOwncloud.



owncloud_user

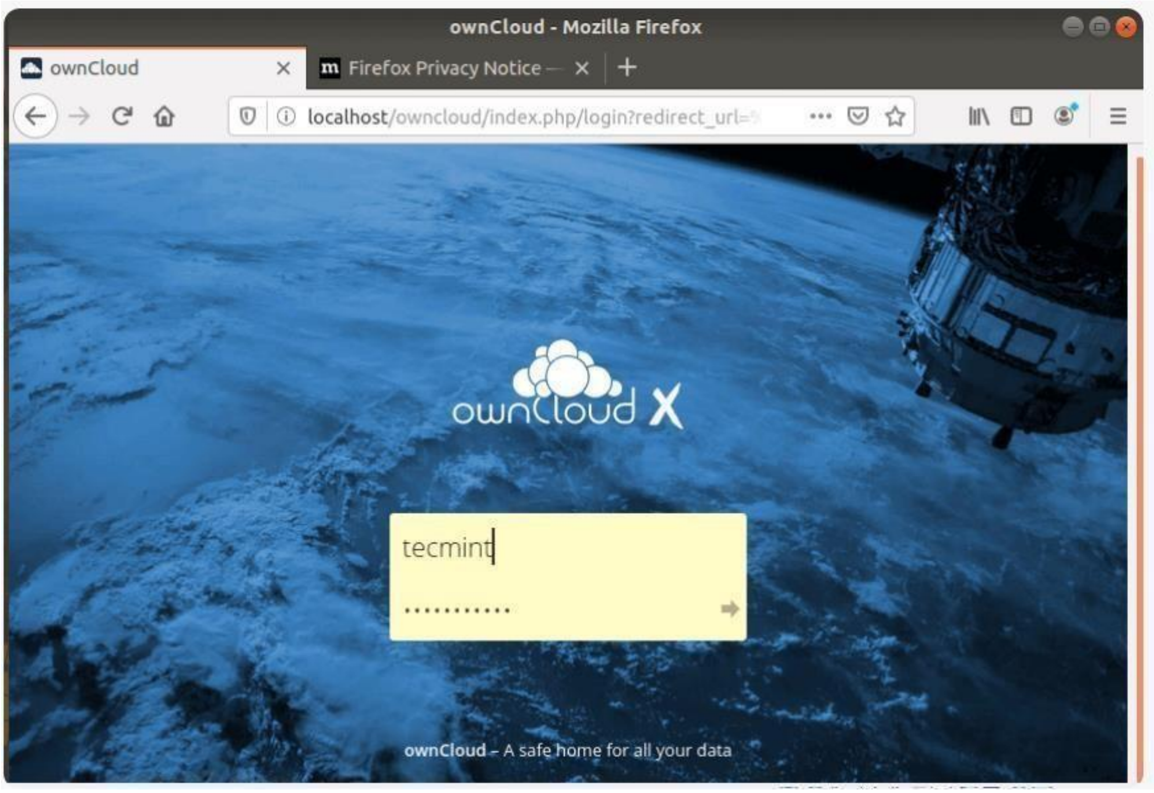
••••••••••••

owncloud_db

localhost

Please specify the port number along with the host name (e.g., localhost: 5432).

13. This takes you to the login screen as shown. Input the username and password defined earlier and hitENTER.



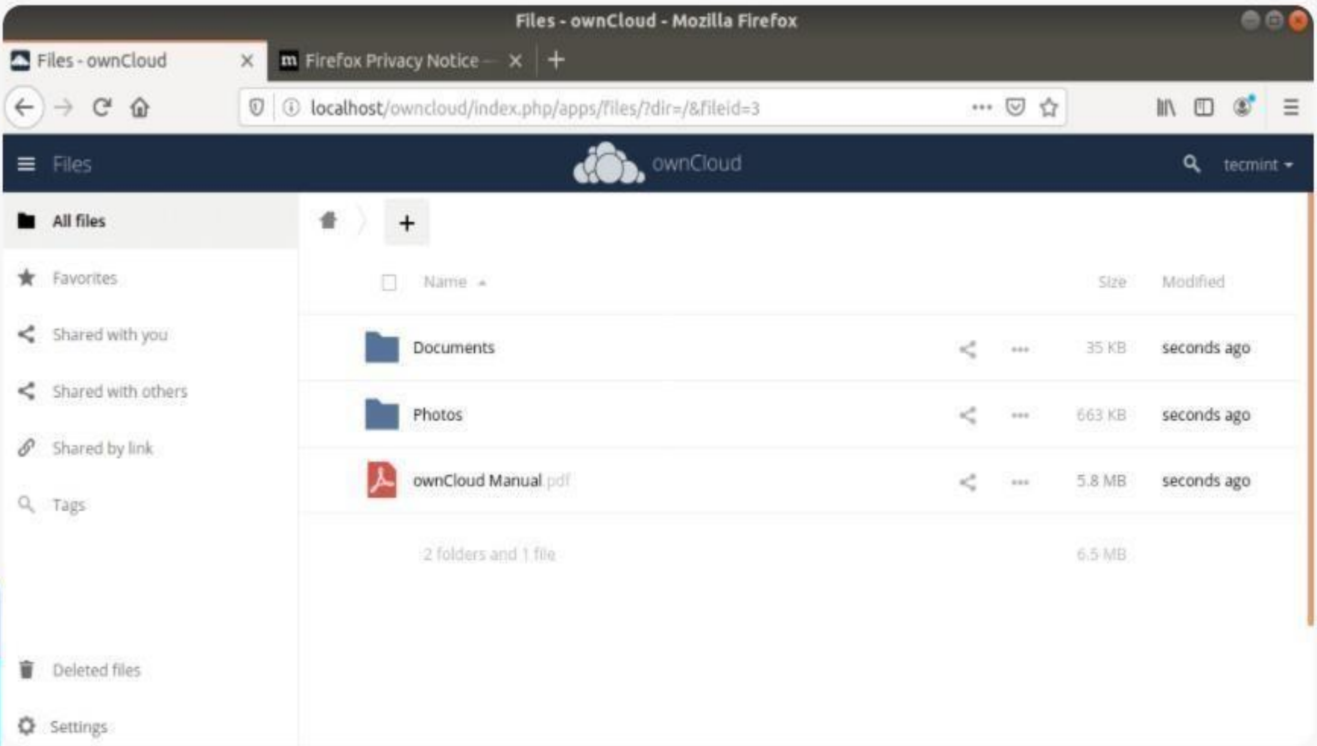
ownCloud - Mozilla Firefox
ownCloud
Firefox Privacy Notice —
localhost/owncloud/index.php/login?redirect_url=
ownCloud X

tecmint

•••••••••••

ownCloud – A safe home for all your data

14. We have successfully installed the**OwnCloud**file sharing platform on**Ubuntu18.04**



Name	Size	Modified
Documents	35 KB	seconds ago
Photos	663 KB	seconds ago
ownCloud Manual.pdf	5.8 MB	seconds ago
2 folders and 1 file	6.5 MB	

OwnCloud Dashboard

Deploying Your Site

First, you need to navigate to your project in the command prompt.

```
cdProjects/my-site
```

If you’re happy with the state of your application – create anindex.phpfile. We can trick Heroku to deploy a static site by including 1 dynamic file.

Theindex.phpfile will be served by Heroku before yourindex.html. We need to make the browser redirect fromindex.phptoindex.html. We only need to include one line of PHP code.

```
<?php header( 'Location: /index.html' ) ;?>
```

Then we’ll use the command line tool calledgitto initialize or create a version of the site you want to deploy. To do that run the command:

```
git init

git add .
```

Theadd .means add all the files to the git repository.

Then you want to*commit*or save all the changes for your site. With a message describing what you’ve done.

```
git commit -m "My site ready fordeployment."
```

Now you want to create your site on Heroku. If you’re already logged in, you can issue the following command:

```
herokuapps:createmy-static-site-example
```

Insert your desired name instead ofmy-static-site-example.

If the name isn’t taken you can deploy your site usinggit.

```
git push herokumaster
```

Once you see “remote: Verifying deploy….done.”

You can now visit your site at https://<whatever-name-you- selected>.herokuapp.com/ or my example site herehttps://my-static-site-example.herokuapp.com/.

If you want to add your own domain check out theHeroku documentation.

If you need to, make changes to your site of the following 3 commands.

Add the changes…

```
gitadd.
```

Save thechanges…

```
git commit -m "Addusefulmessage"
```

Then deploy…

```
git push herokumaster
```

Q2. What are the steps to create a simple website?

Step 1: Choosing a Domain name and Hosting for your website–

To start creating your website you need 2 things: A domain (your site’s name) and Hosting (where your site’s files get hosted).

Step 2: Prepare your content

Think about what you want your customers to be able to do via your website. This will help you work out what sections or pages you want to include. Consider what information or transactions your customers will want and make sure the site is structured to make it easy for them to find and do the things they need.

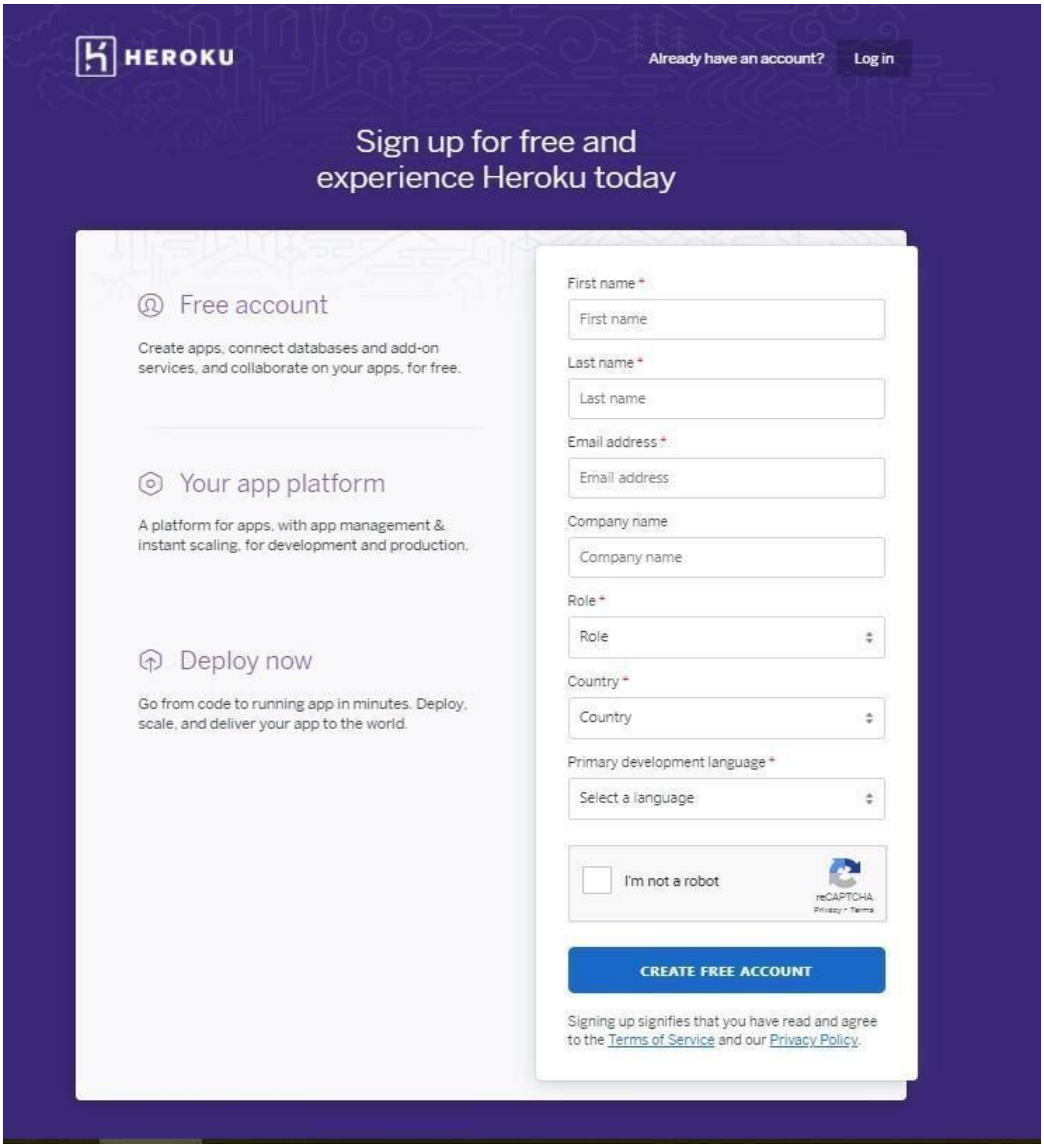
Step 3: Build your website.

You can build your own website or have a professional web developer build it for you. Websites need to be kept up to date, so make sure you plan for ongoing maintenance. You can use a website publishing package to build your own website. These are similar to word processors, but also have inbuilt features to convert your text and images to web content and send it to your website.

Q3. Create a cloud account.

Here we have created an account using Heroku. Heroku is a hosting platform where you can deploy dynamic applications in Rails, PHP, Node.js and Python web applications.

ForcreatinganHerokuaccountvisithttps://id.heroku.com/login



Sign up for free and experience Heroku today

Free account

Create apps, connect databases and add-on services, and collaborate on your apps, for free.

Your app platform

A platform for apps, with app management & instant scaling, for development and production.

Deploy now

Go from code to running app in minutes. Deploy, scale, and deliver your app to the world.

Signing up signifies that you have read and agree to the Terms of Service and our Privacy Policy.

Fill in the details and click on CREATE FREE ACCOUNT and Heroku is ready to use.

Conclusion: Successful installation of OwnCloud on the VM and successful hosting of cloud service on cloud.