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Section: BCS-6A

Subject: Parallel Distributed Computing

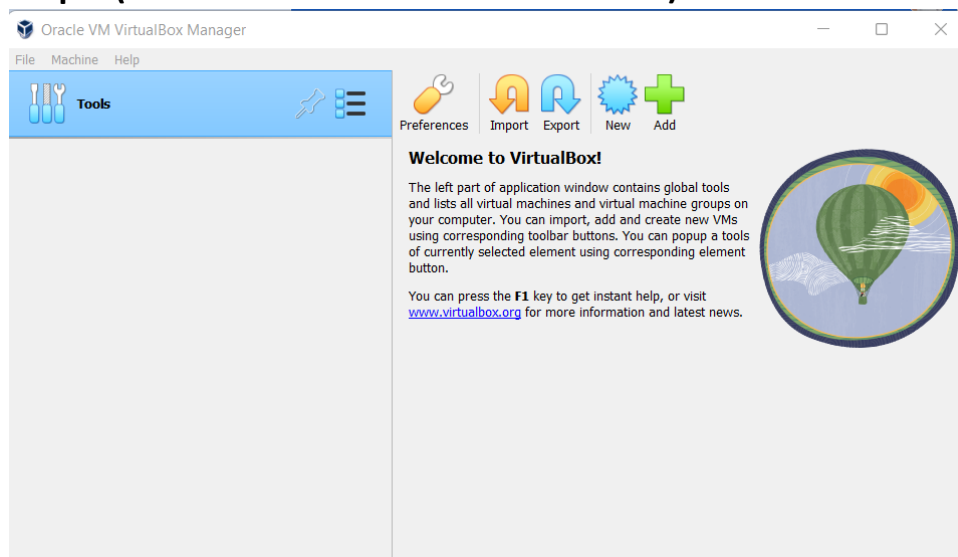
Assignment: Create a Manual for Create Local Next Cloud Server

Q: - Create a Local Next Cloud Server Step by Step.

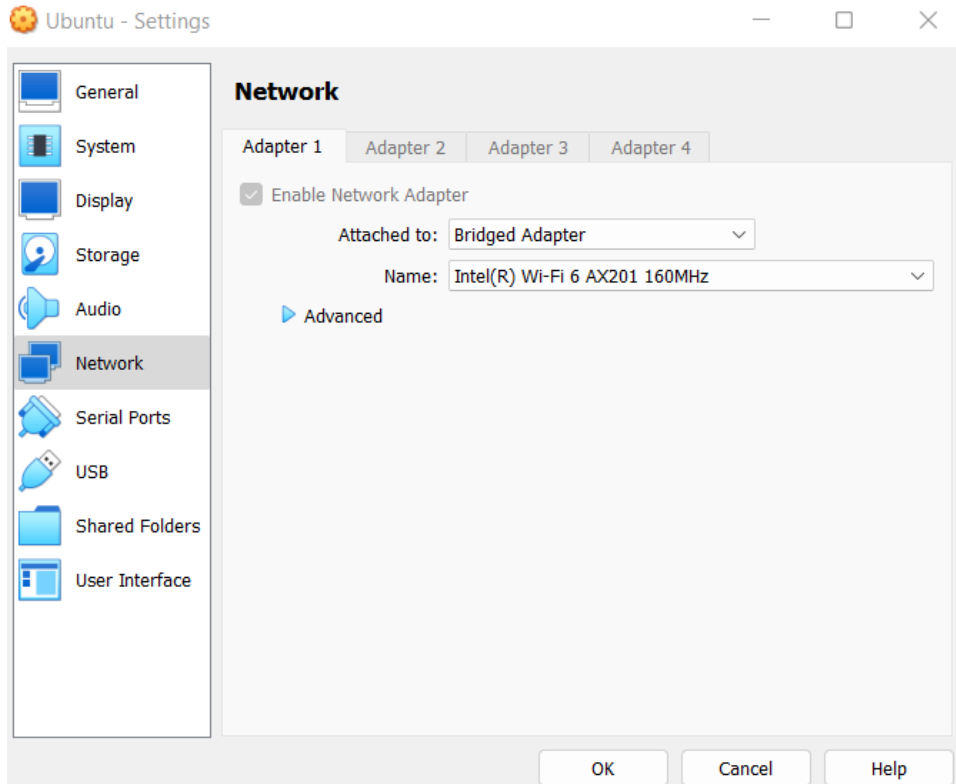
Step 1(Download Ubuntu 18.04):

Next Cloud requires a server running linux. Download Ubuntu 18.04.

Step 2 (Install Virtual Box and Create a VM):

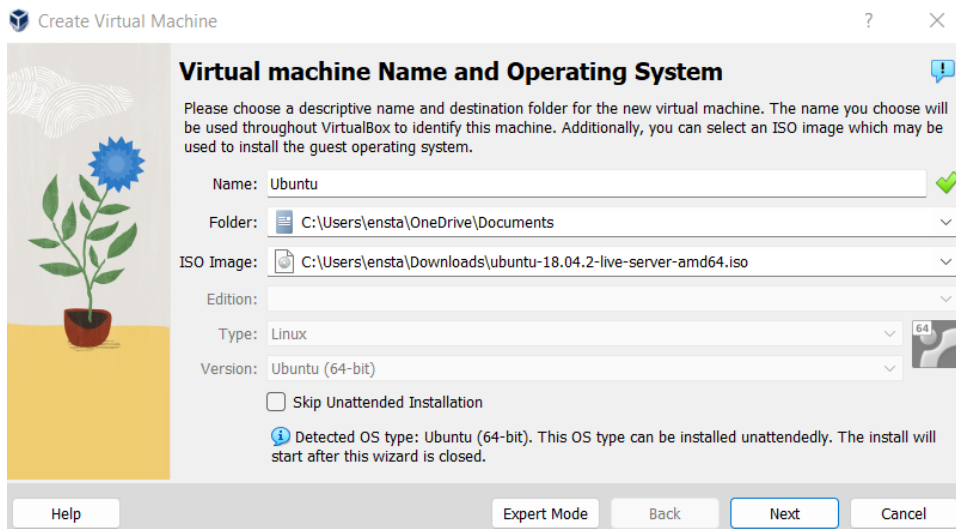


Here click on setting and click on Network and then select the network type 'Bridge Adaptor'. This is a really important step.

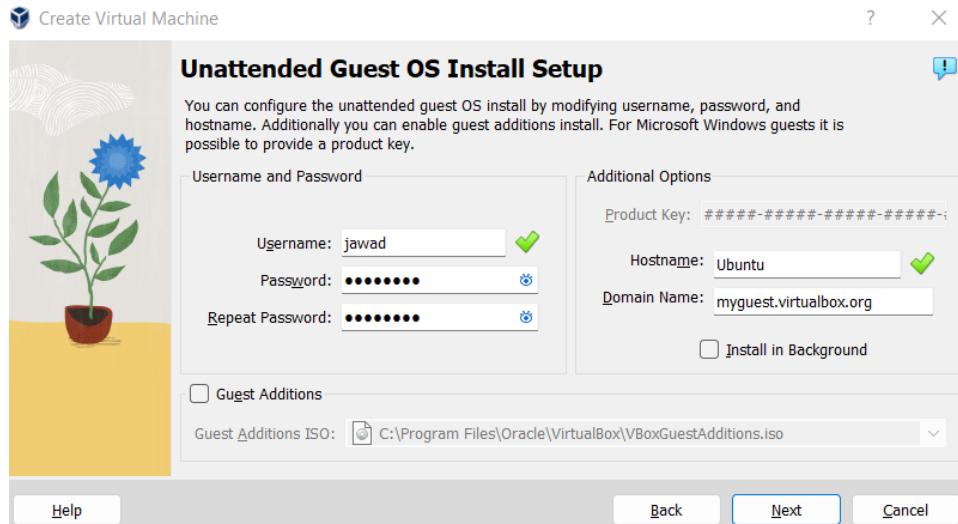


Now select 'New' Option and start creating virtual machine.

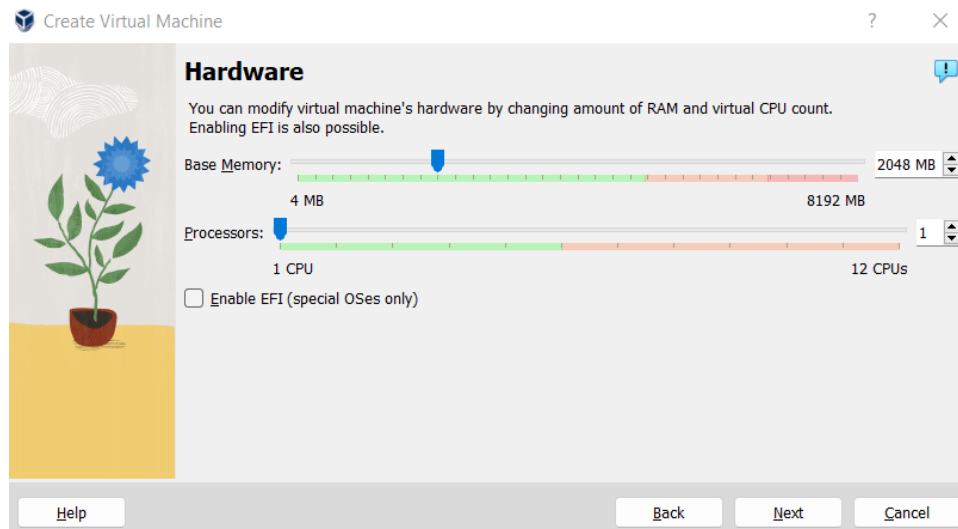
Step 3 (Name the VM):



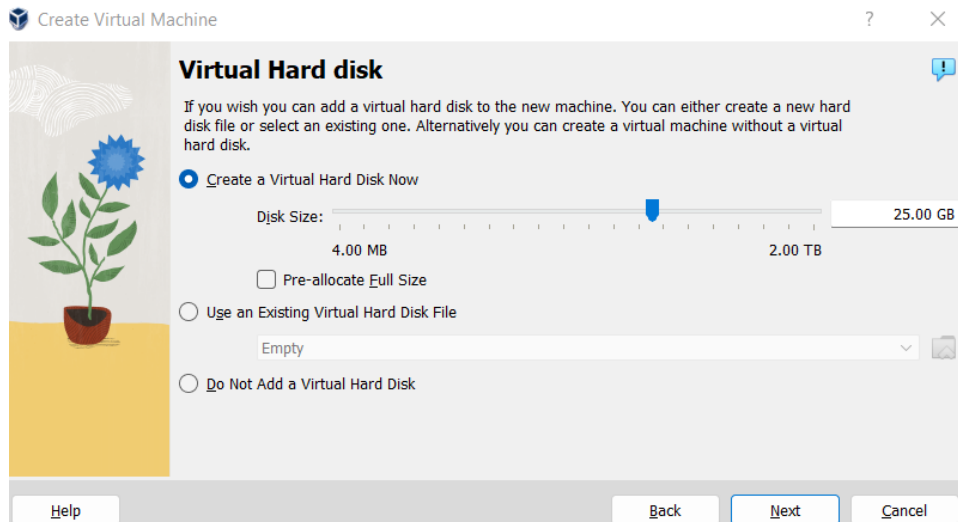
Step 4(Set username and password):



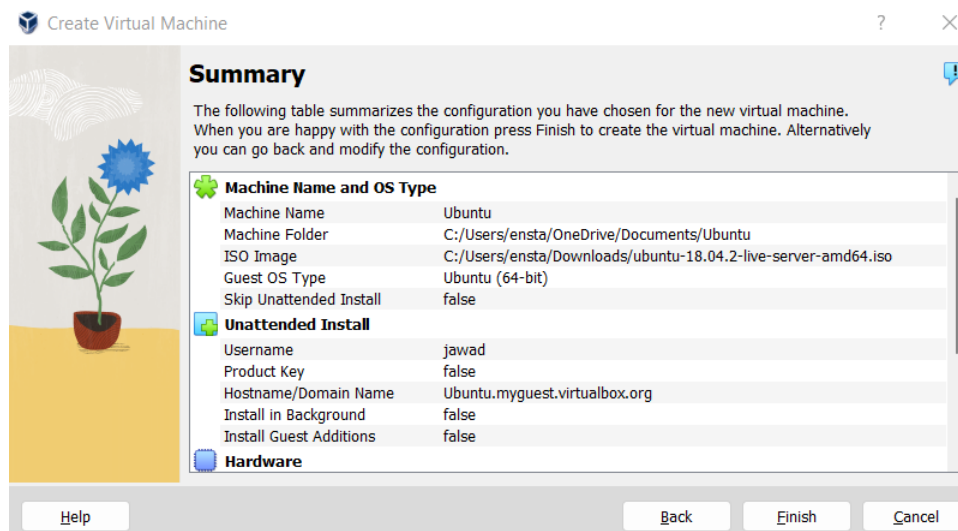
Step5: Select Base Memory and Number of processors.



Step 6: Select the option 'Create Virtual Hard Disk Now'.

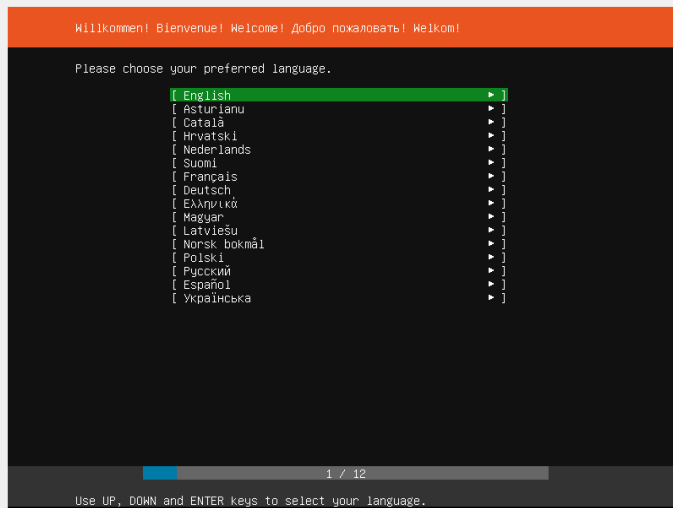


Step 7: Verify All details and then click on finish.

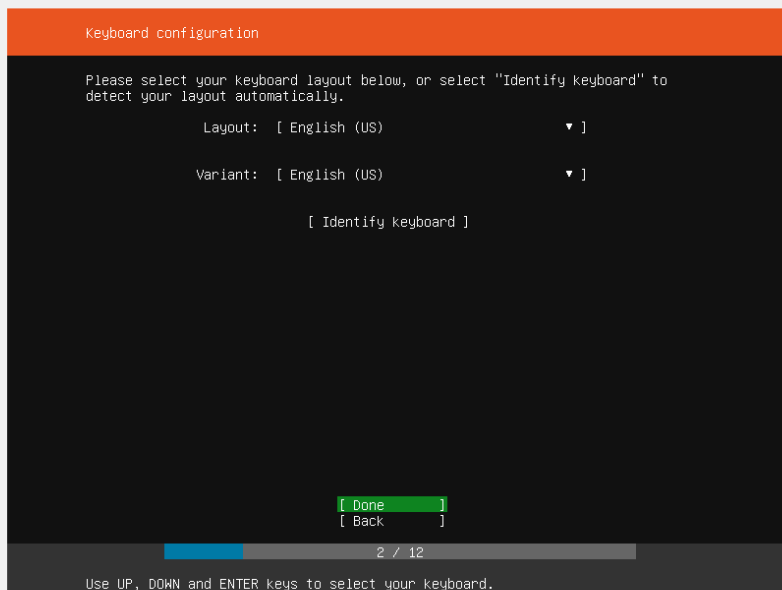


The virtual machine is powering up. It takes some time and this interface will be shown to you.

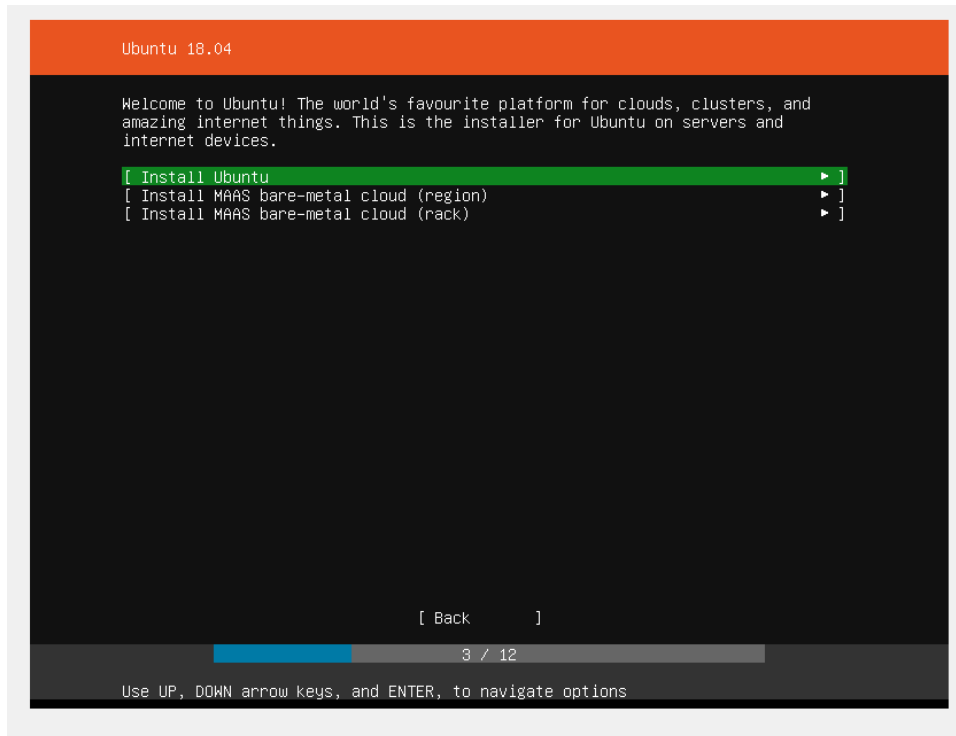
Step8: Select 'English'.



Step 9: Select the Keyboard Layout then click on Done.



Step 10: The select option 'Install Ubuntu'.



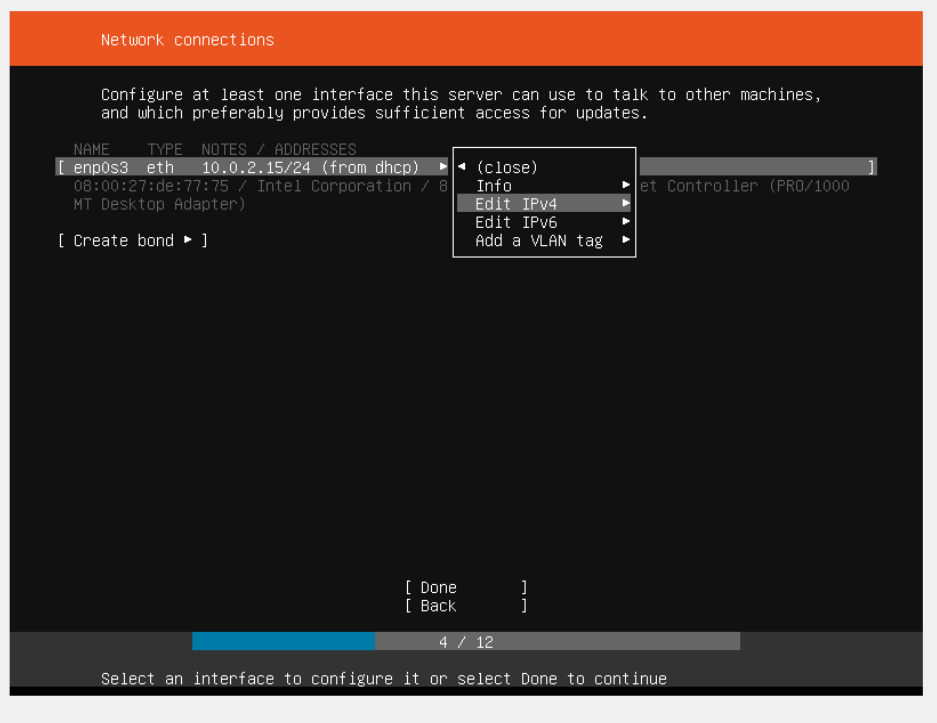
Step 11: Now this option is important. It is said that I set up the IP using DHCP. That is easy but it is preferred to set IP statically. So go for manual configuration of IP. Now what IP you are going to provide. Go to the windows terminal and type command 'ipconfig' there you will find all the details like IP address, subnet masks, default gateway. Provide the IP address of same network that you got from 'ipconfig' command.

```
Wireless LAN adapter WiFi:

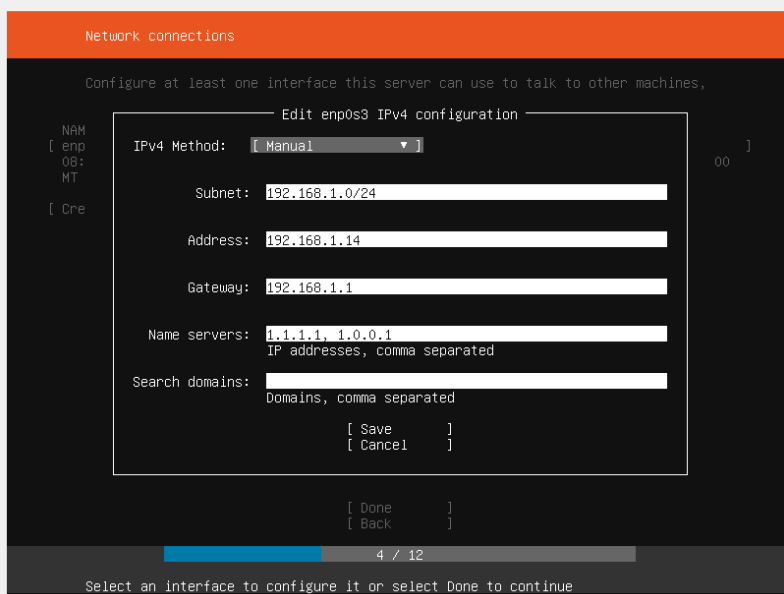
Connection-specific DNS Suffix  . : 
Link-local IPv6 Address . . . . . : fe80::8226:3367:5bb6:e6e0%19
IPv4 Address. . . . . : 192.168.1.13
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : fe80::aa63:7dff:fe7c:7203%19
                             192.168.1.1

PS C:\Users\ensta>
```

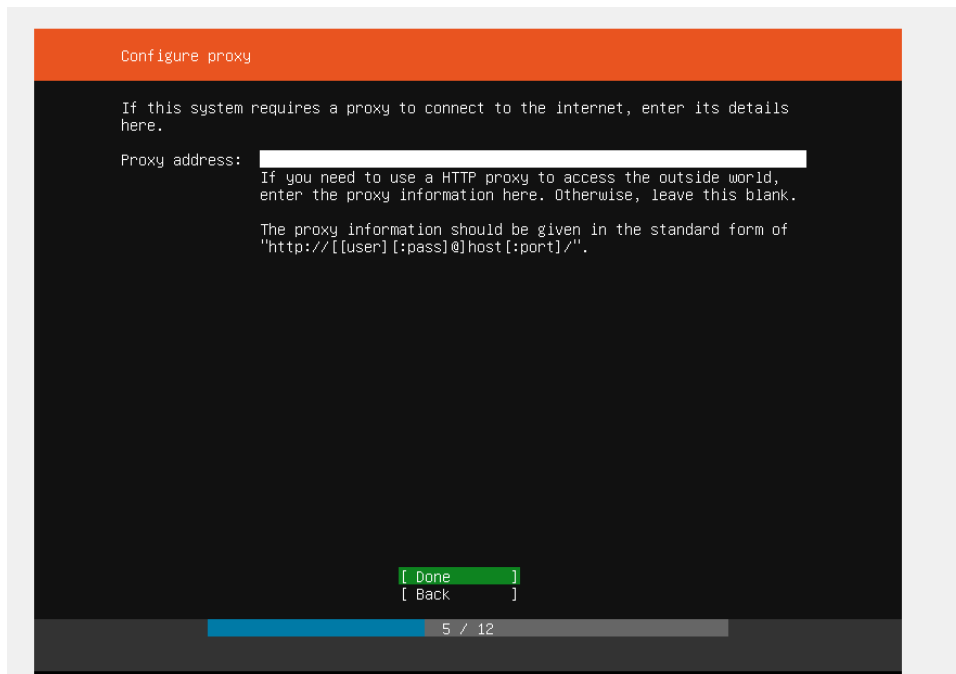
Step 11: Select option 'Edit IPV4'.



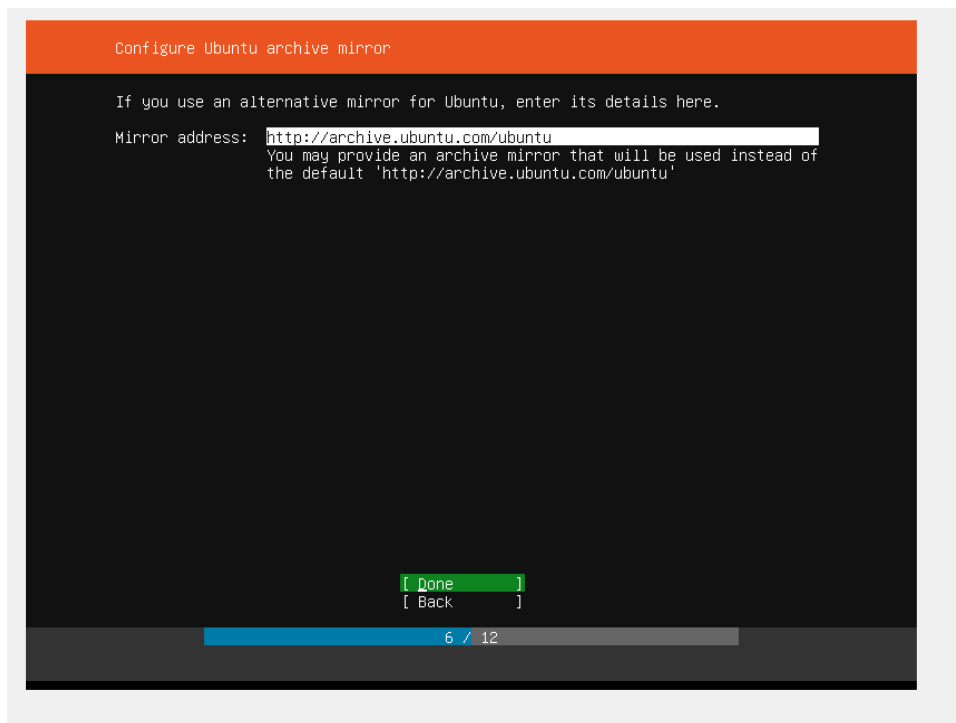
Step 12: Set the IP address, subnet mask, default gateway, nameservers and then click on Save.



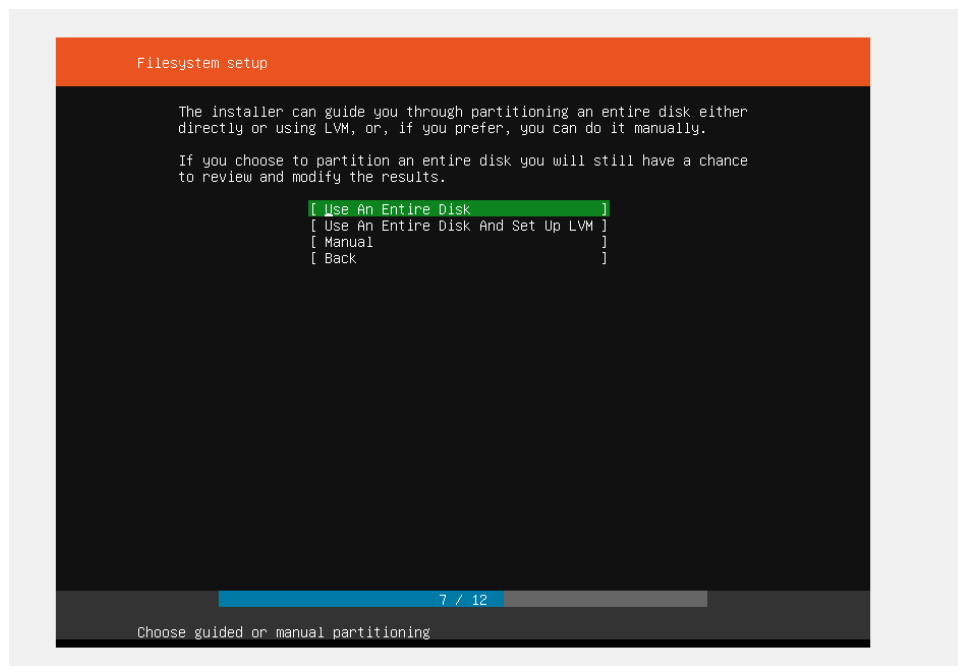
Step 13: Click on 'Done'.



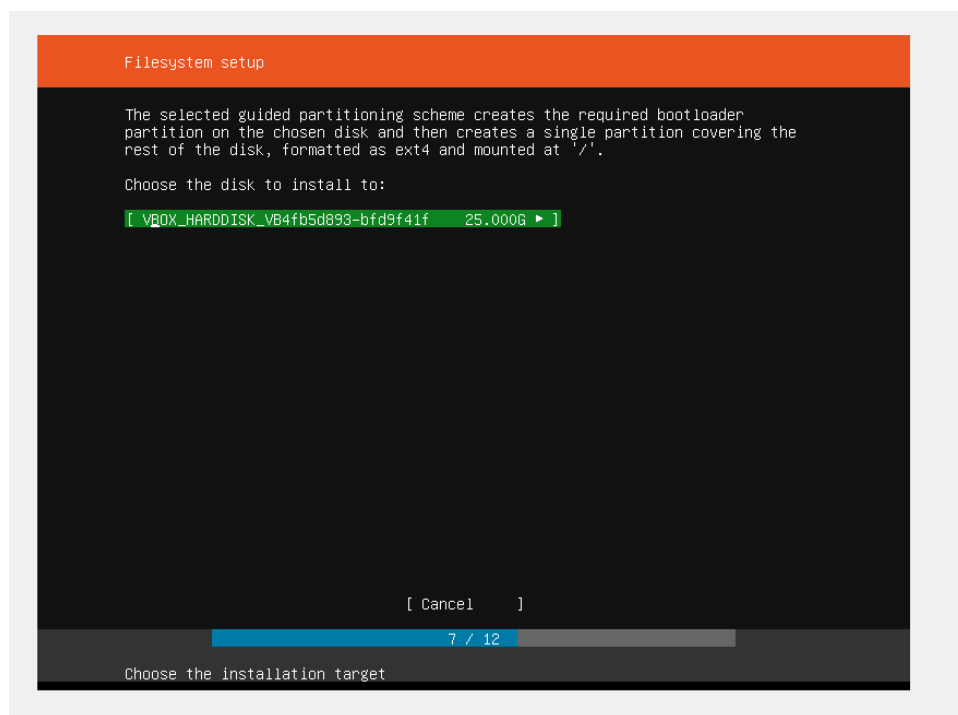
Step 14: Again, go with default option and click on Done.



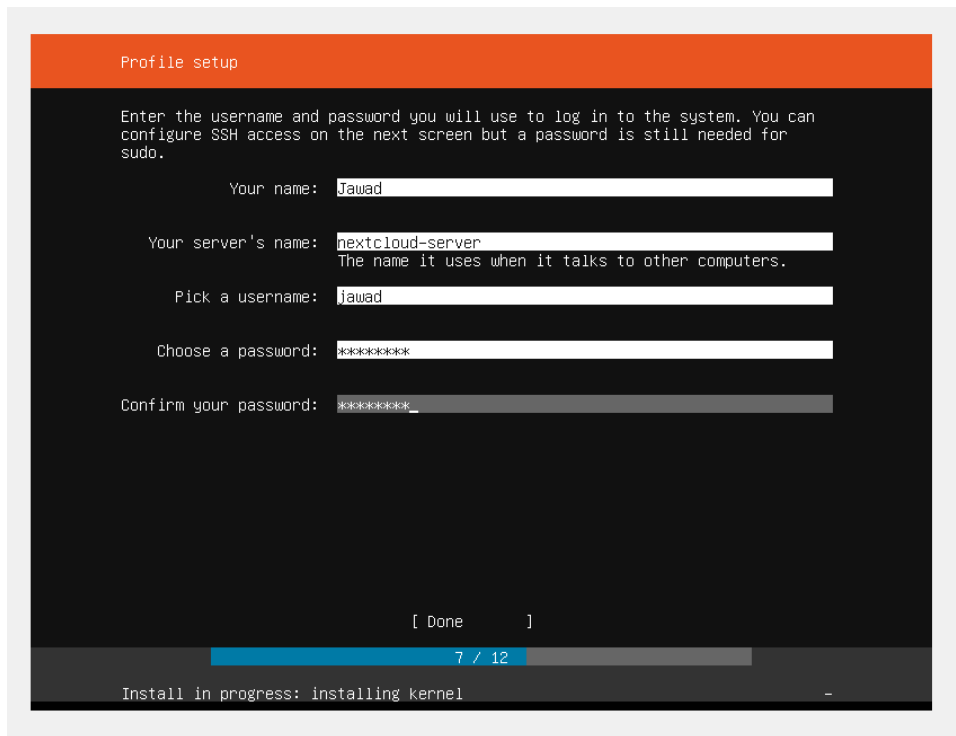
Step 15: Select Option 'Use an Entire Disk' and then proceed next.



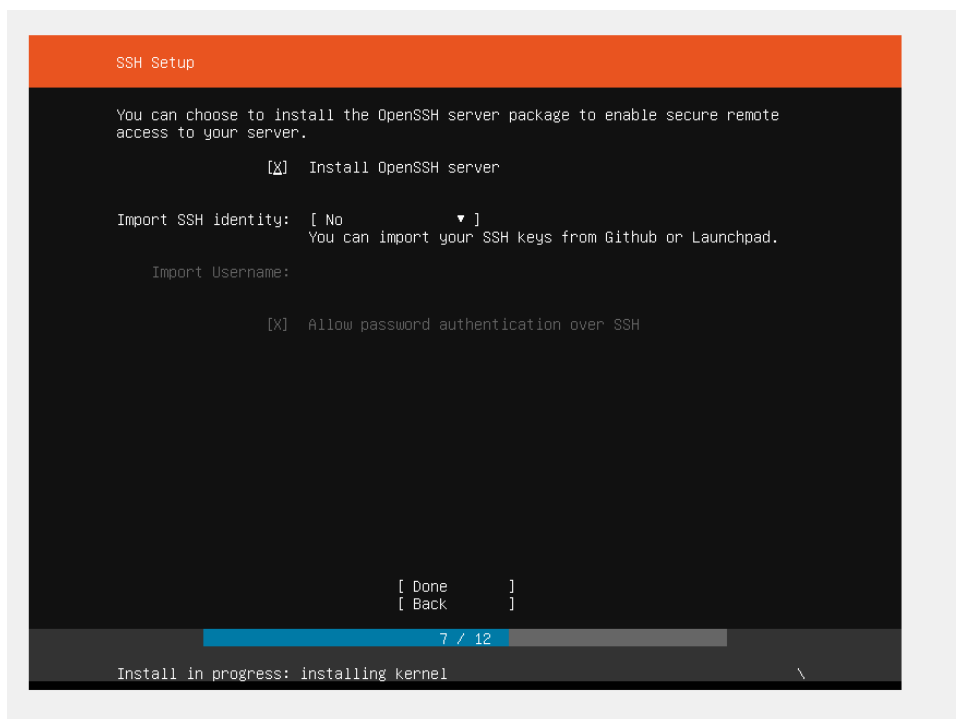
Step 16: Select the Disk in which you want to install.



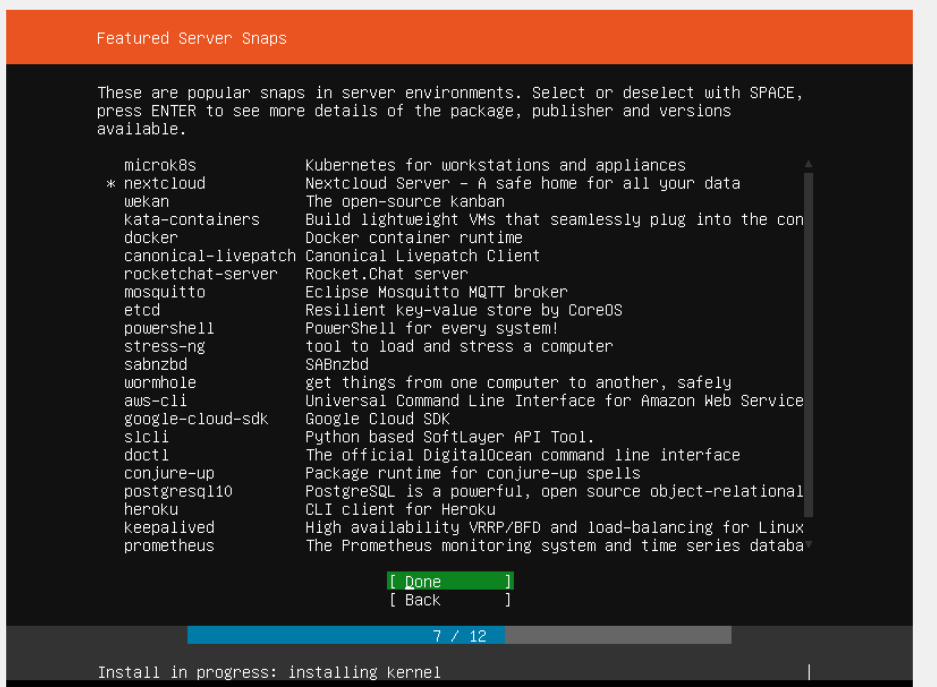
Step 18: Now 'Profile Setup' Select the username and password. This username and password will be used to login to ubuntu. So, remember it.



Step 19: Then proceed next. Now Select the Open SSH option and then proceed next.

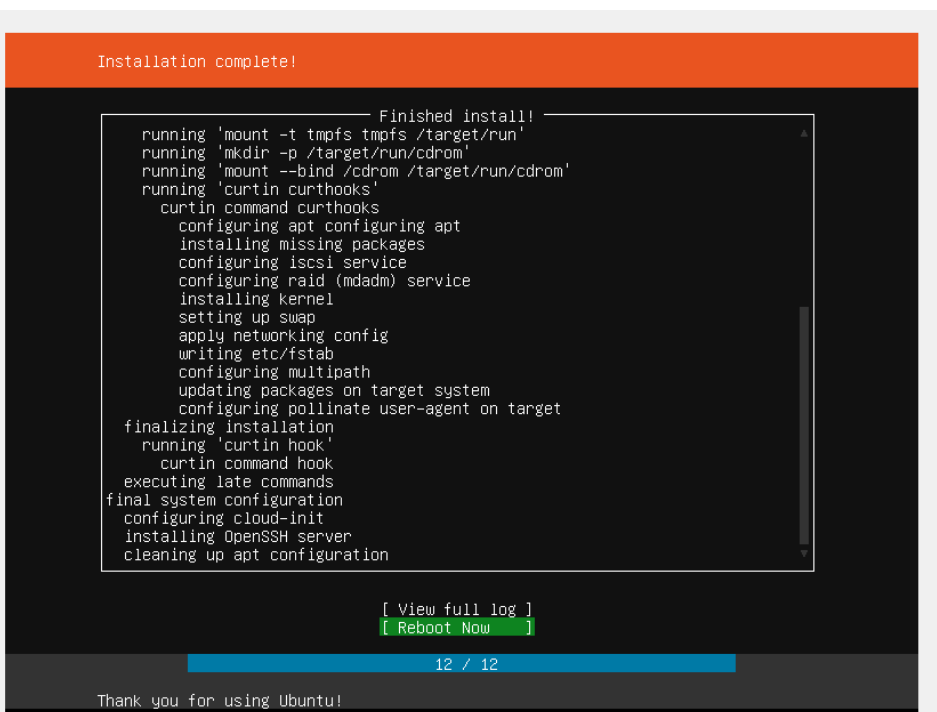


Step 20: In next option select 'nextcloud' by pressing space bar and then proceed next.



Step 21: Now the installation has started it will take some time to complete the installation.

Now click on 'Reboot now' option.



Step 22: Once rebooted successfully provide username and password to login into your ubuntu machine.

```
Ubuntu 18.04.2 LTS nextcloud-server tty1
nextcloud-server login: jawad
Password:
Welcome to Ubuntu 18.04.2 LTS (GNU/Linux 4.15.0-45-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Mon Mar 27 00:24:43 UTC 2023

System load:  0.16               Processes:    90
Usage of /:   15.5% of 24.48GB   Users logged in: 0
Memory usage: 9%                IP address for enp0s3: 192.168.1.14
Swap usage:  0%

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

jawad@nextcloud-server:~$ _
```

Step 23: Perform an initial system update. Run `sudo apt-get update && sudo apt-get upgrade && sudo apt-get dist-upgrade`. Enter your password when prompted. If you're asked to confirm an upgrade, type `y`, and press Enter

```
jawad@nextcloud-server:~$ sudo apt-get update && sudo apt-get upgrade && sudo apt-get dist-upgrade_
```

Step 24: Add a firewall rule to allow OpenSSH connections. Run `sudo ufw allow OpenSSH`.

```
jawad@nextcloud-server:~$ sudo ufw allow OpenSSH
Rules updated
Rules updated (v6)
jawad@nextcloud-server:~$
```

Step 25: Run `sudo ufw enable` to enable the firewall.

```
rules updated (v6)
jawad@nextcloud-server:~$ sudo ufw enable
Firewall is active and enabled on system startup
jawad@nextcloud-server:~$ _
```

Step 26: Run `sudo ufw status` to verify that the firewall is filtering the server's network traffic

```
jawad@nextcloud-server:~$ sudo ufw status
Status: active

To Action From
--
OpenSSH ALLOW Anywhere
OpenSSH (v6) ALLOW Anywhere (v6)
jawad@nextcloud-server:~$
```

Step 27: Start the next cloud server. Type the command

=> `sudo nextcloud.manual-install user pass`

At user type the username and pass type the password. These username and password will be used to login to the next cloud server.

I ran to an issue that says “nextcloud.manual-install” not found. If same issue arises at your side follow these steps otherwise skip these commands.

1 => `sudo snap install nextcloud`

Add the Snap binary directory to your system’s PATH environment variable.

1. Open the `.bashrc` file

=> `nano ~/.bashrc`

2. Add the following line at the end of file

=> `export PATH=$PATH:/snap/bin`

3. Save and close

4. Reload the `.bashrc` file

=> `source ~/.bashrc`

Now the run the **sudo nextcloud.manual-install user pass** command again and you see command run without any error.

```
jawad@nextcloud-server:~$ sudo nextcloud.manual-install nextcloud nextcloud123
Nextcloud was successfully installed
jawad@nextcloud-server:~$ _
```

Step 28: Next, open ports 80 (HTTP) and 443 (HTTPS) in your firewall. Run **sudo ufw allow 80,443/tcp**.

=> **sudo ufw allow 80,443/tcp**

```
jawad@nextcloud-server:~$ sudo ufw allow 80,443/tcp
Rule added
Rule added (v6)
jawad@nextcloud-server:~$
```

Step 29: View the Trusted Domains

=> **sudo nextcloud.occ config:system:get trusted_domains**

```
jawad@nextcloud-server:~$ sudo nextcloud.occ config:system:get trusted_domains
localhost
jawad@nextcloud-server:~$
```

Step 30: Add your server IP address to trusted domains list.

We have setted the IP address statically. IP address is **192.168.1.14**. You can cross verify. Run this command to view the IP address.

=> **ip a | grep inet**

```
jawad@nextcloud-server:~$ ip a | grep inet
inet 127.0.0.1/8 scope host lo
inet6 ::1/128 scope host
inet 192.168.1.14/24 brd 192.168.1.255 scope global enp0s3
inet6 fe80::a00:27ff:fe3c:b1de/64 scope link
jawad@nextcloud-server:~$
```

=> `sudo nextcloud.occ config:system:set trusted_domains 1 – value=YOUR_IP_ADDRESS`

```
jawad@nextcloud-server:~$ sudo nextcloud.occ config:system:set trusted_domains 1 --value=192.168.1.14
System config value trusted_domains => 1 set to string 192.168.1.14
jawad@nextcloud-server:~$ sudo nextcloud.occ config:system:get trusted_domains
localhost
192.168.1.14
jawad@nextcloud-server:~$
```

Step 31: Create an SSL certificate so that Nextcloud can encrypt your data over HTTPS.

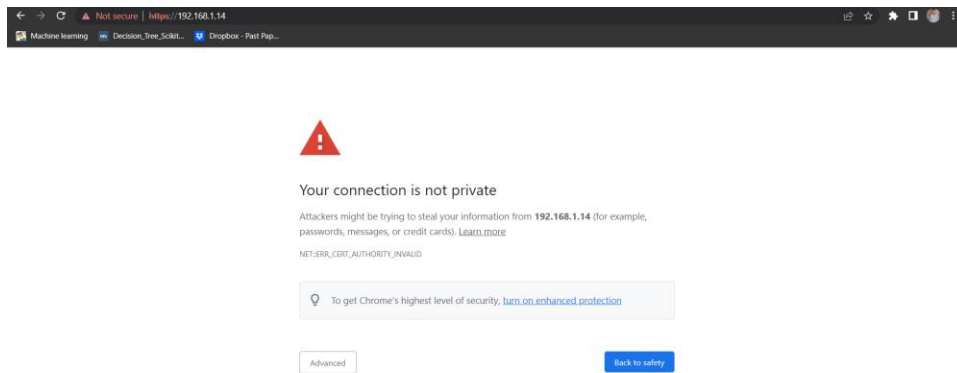
=> `sudo nextcloud.enable-https self-signed`

```
jawad@nextcloud-server:~$ sudo nextcloud.enable-https self-signed
Generating key and self-signed certificate... done
Restarting apache... done
jawad@nextcloud-server:~$ _
```

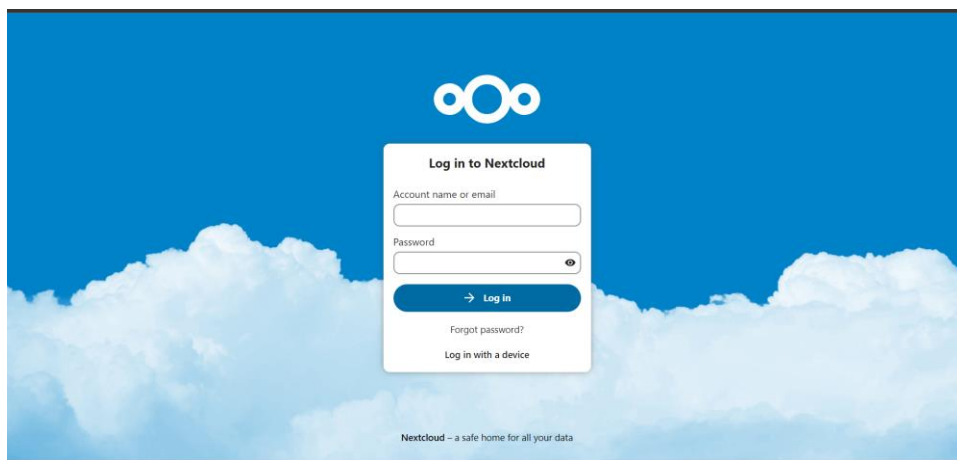
Server configuration is complete, and your cloud is operational. The Nextcloud service is running, and your server is listening on your local network for HTTP and HTTPS connection requests.

Login Into Next Cloud:

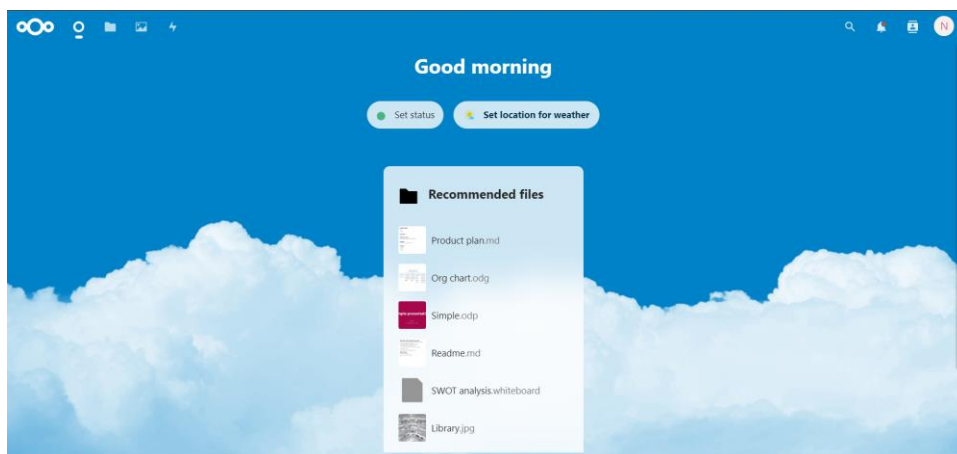
Open the web browser and type the IP address of the server.



Click on Advanced and then click on proceed to 192.168.1.14 unsafe. This interface will be shown to you. Login into the next cloud with the username and password you configured when creating nextcloud server.



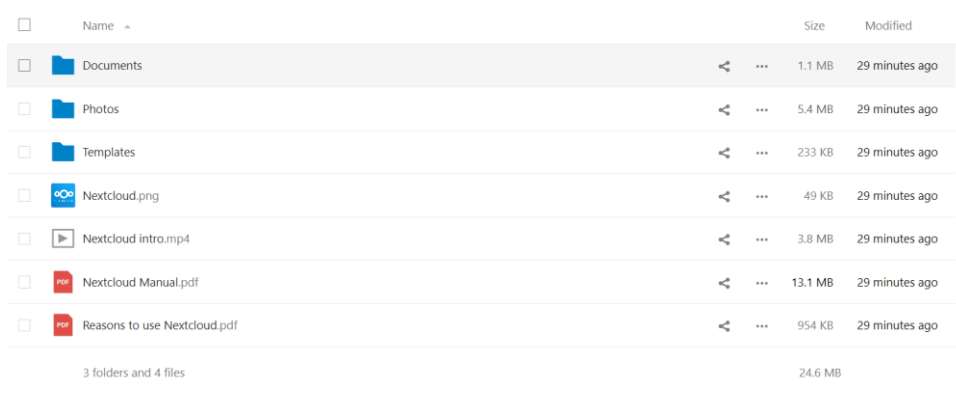
This dashboard will be shown to you.



You can also login to the next Cloud app. Download the nextcloud app on your mobile and desktop and any file you upload on your phone will be shown here also.

Demo of Uploading a file from next cloud app and shown on Browser:

These are the file at the moment. Now uploading another pdf file in next cloud using next cloud app.



A screenshot of the Nextcloud web interface showing a file list. The interface includes a search bar at the top, a list of files and folders, and a summary at the bottom. The files and folders are listed with their names, sizes, and modification times. The summary at the bottom indicates there are 3 folders and 4 files, totaling 24.6 MB.

<input type="checkbox"/>	Name		Size	Modified
<input type="checkbox"/>	Documents	...	1.1 MB	29 minutes ago
<input type="checkbox"/>	Photos	...	5.4 MB	29 minutes ago
<input type="checkbox"/>	Templates	...	233 KB	29 minutes ago
<input type="checkbox"/>	Nextcloud.png	...	49 KB	29 minutes ago
<input type="checkbox"/>	Nextcloud intro.mp4	...	3.8 MB	29 minutes ago
<input type="checkbox"/>	Nextcloud Manual.pdf	...	13.1 MB	29 minutes ago
<input type="checkbox"/>	Reasons to use Nextcloud.pdf	...	954 KB	29 minutes ago
3 folders and 4 files			24.6 MB	

Uploaded a Lec 12 manual using next cloud app.

























↑

Nextcloud > Jawad Ahmed > Nextcloud2

Search Nextcloud2

Name	Status	Date modified	Type	Size
Documents	🔗	3/27/2023 7:39 AM	File folder	
Photos	🔗	3/27/2023 7:40 AM	File folder	
Templates	🔗	3/27/2023 7:40 AM	File folder	
.nextcloudsync	🔄	3/27/2023 8:13 AM	Text Document	0 KB
Lec-12a-How can I create a personal clo...	✅	3/26/2023 12:15 PM	Microsoft Edge PD...	1,440 KB
Nextcloud intro	🔗	3/27/2023 7:39 AM	MP4 File	3,871 KB
Nextcloud Manual	🔗	3/27/2023 7:39 AM	Microsoft Edge PD...	13,428 KB
Nextcloud	🔗	3/27/2023 7:39 AM	PNG File	50 KB
Reasons to use Nextcloud	🔗	3/27/2023 7:40 AM	Microsoft Edge PD...	954 KB

That file is also shown on browser.

<input type="checkbox"/>	Name			Size	Modified
<input type="checkbox"/>	 Documents			1.1 MB	43 minutes ago
<input type="checkbox"/>	 Photos			5.4 MB	43 minutes ago
<input type="checkbox"/>	 Templates			233 KB	43 minutes ago
<input type="checkbox"/>	 Lec-12a-How can I create a personal cloud server_.pdf			1.4 MB	20 hours ago
<input type="checkbox"/>	 Nextcloud.png			49 KB	43 minutes ago
<input type="checkbox"/>	 Nextcloud intro.mp4			3.8 MB	43 minutes ago
<input type="checkbox"/>	 Nextcloud Manual.pdf			13.1 MB	43 minutes ago
<input type="checkbox"/>	 Reasons to use Nextcloud.pdf			954 KB	43 minutes ago
3 folders and 5 files				26 MB	

