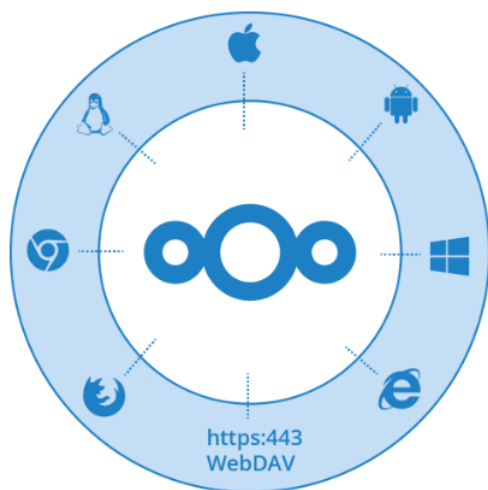




DOCUMENTED BY: KEVIN MA, JOSEPH HARRISON LIM, POULAD ASHRAF POUR, MAMUNUR RAHMAN ON SEPTEMBER 15, 2018
LAST UPDATED ON SEPTEMBER 23, 2018

WHAT IS NEXTCLOUD?



Nextcloud gives you access to all your files wherever you are.

Where are your photos and documents? With Nextcloud **you** pick a server of your choice, at home, in a data center or at a provider. And that is where your files will be. Nextcloud runs on that server, protecting your data and giving you access from your desktop or mobile devices. Through Nextcloud you also access, sync and share your existing data on that FTP drive at school, a Dropbox or a NAS you have at home.

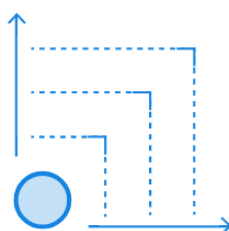
Nextcloud is free, open source and [you can get involved in making it better!](#)

WHY SHOULD WE USE NEXTCLOUD?



Control

Protect, control and monitor data and communication across your company. Guarantee compliance with business and legal requirements. Keep your data on servers you own, at all times. Nothing leaks, not even metadata.



Productivity

Enable productivity across any platform, whether in the office or on the road, to share, collaborate and communicate across organizational boundaries. Nextcloud provides transparent access to data on any storage.



Community

Enjoy constant improvements from a thriving and transparent, entirely open-source community development model, free of lockins or paywalls. Enjoy the benefits of enterprise support when you need it.

NEXTCLOUD SERVER SETUP

To start using Nextcloud, we will need to have a cloud server setup. There are several different ways to do this. We have explored two options here:

1. Using Oracle VirtualBox
2. Using Docker Containers

USING ORACLE VIRTUALBOX (VIRTUAL MACHINES)

PRE-REQUISITES

1. Oracle VirtualBox
2. Virtual Machine running Ubuntu Server (recommended 18.04.1 LTS)
3. Snappy Netcloud (<https://github.com/nextcloud/nextcloud-snap>)

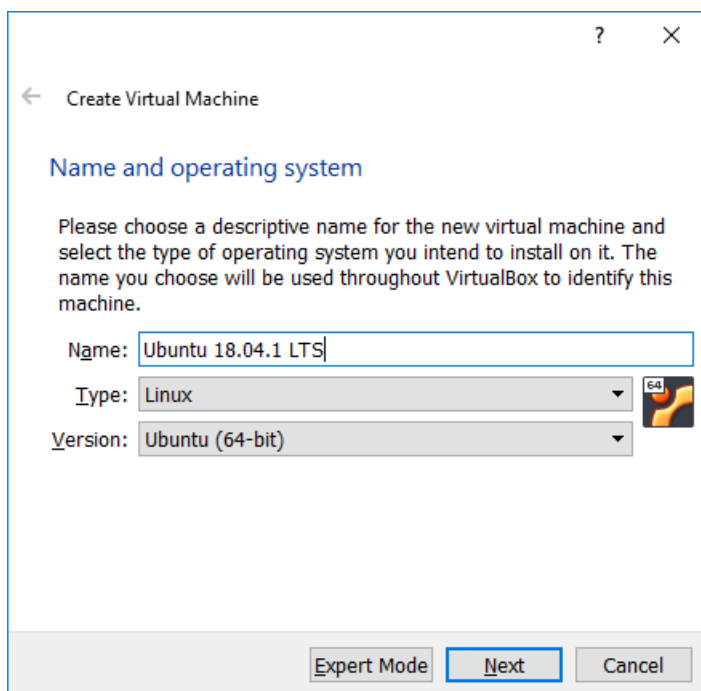
SNAPPY NETCLOUD

Nextcloud server packaged as a snap. It consists of:

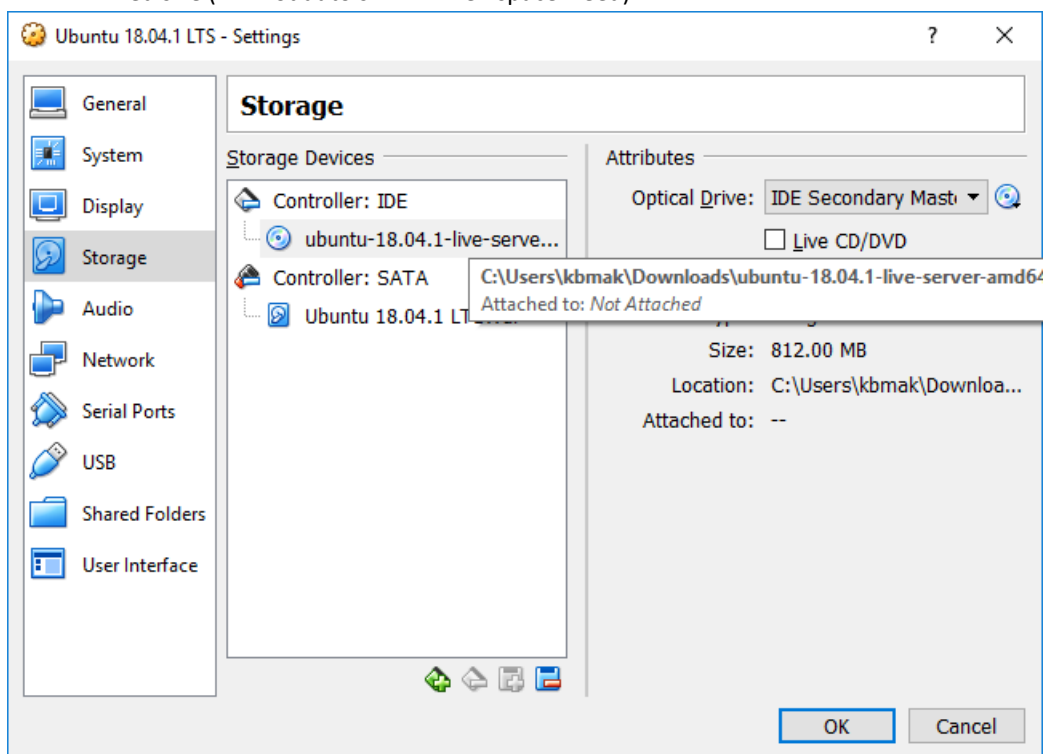
- Nextcloud 13.0.5
- Apache 2.4
- PHP 7.1
- MySQL 5.7
- Redis 4.0
- mDNS for network discovery

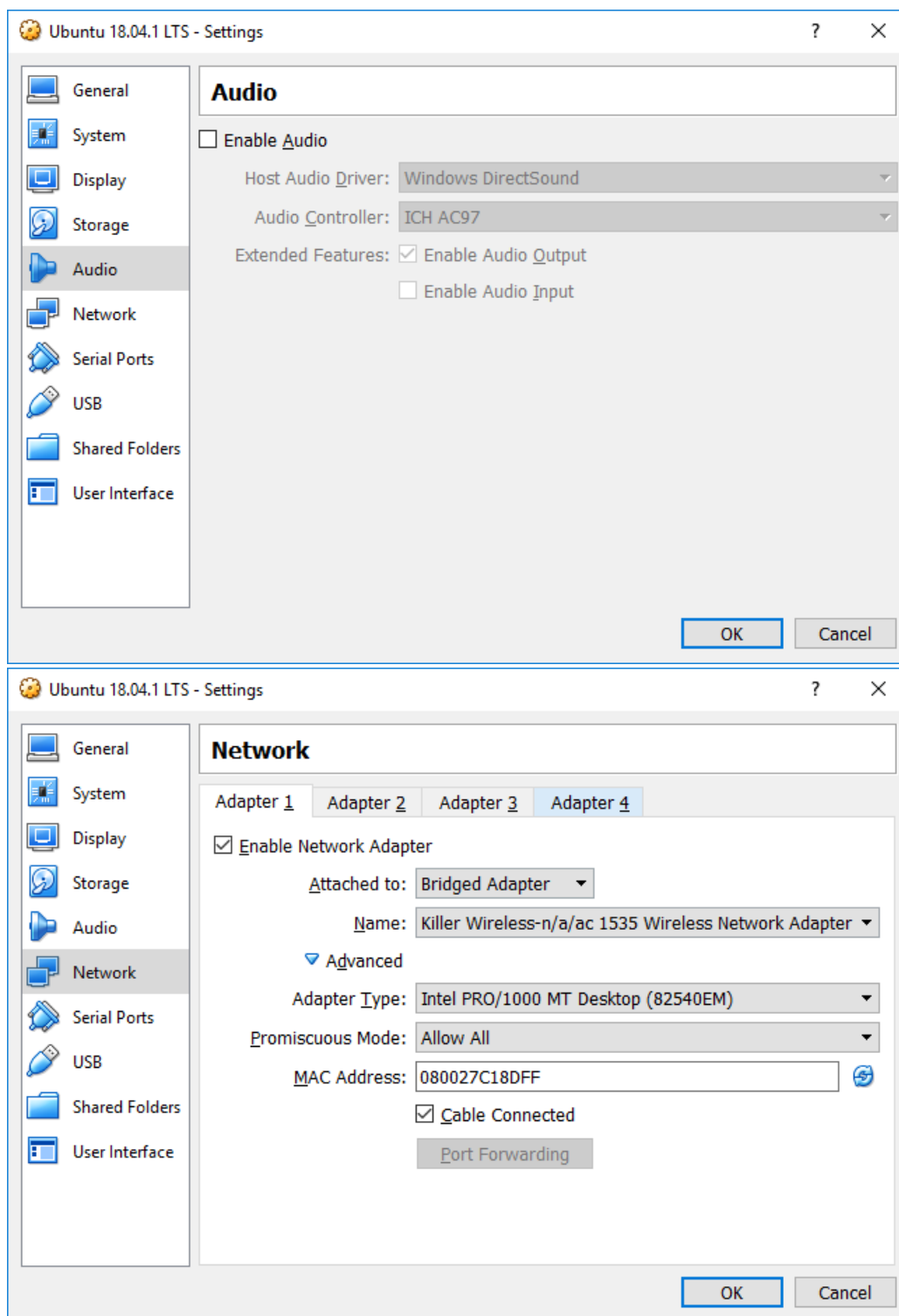
HOW TO INSTALL

1. Download the latest version of Oracle VirtualBox from <https://www.virtualbox.org/wiki/Downloads>
2. Install Oracle VirtualBox using the GUI installer
3. Download Ubuntu Server 18.04.1 LTS from <https://www.ubuntu.com/download/server>
4. Create a new Virtual Machine in Oracle VirtualBox

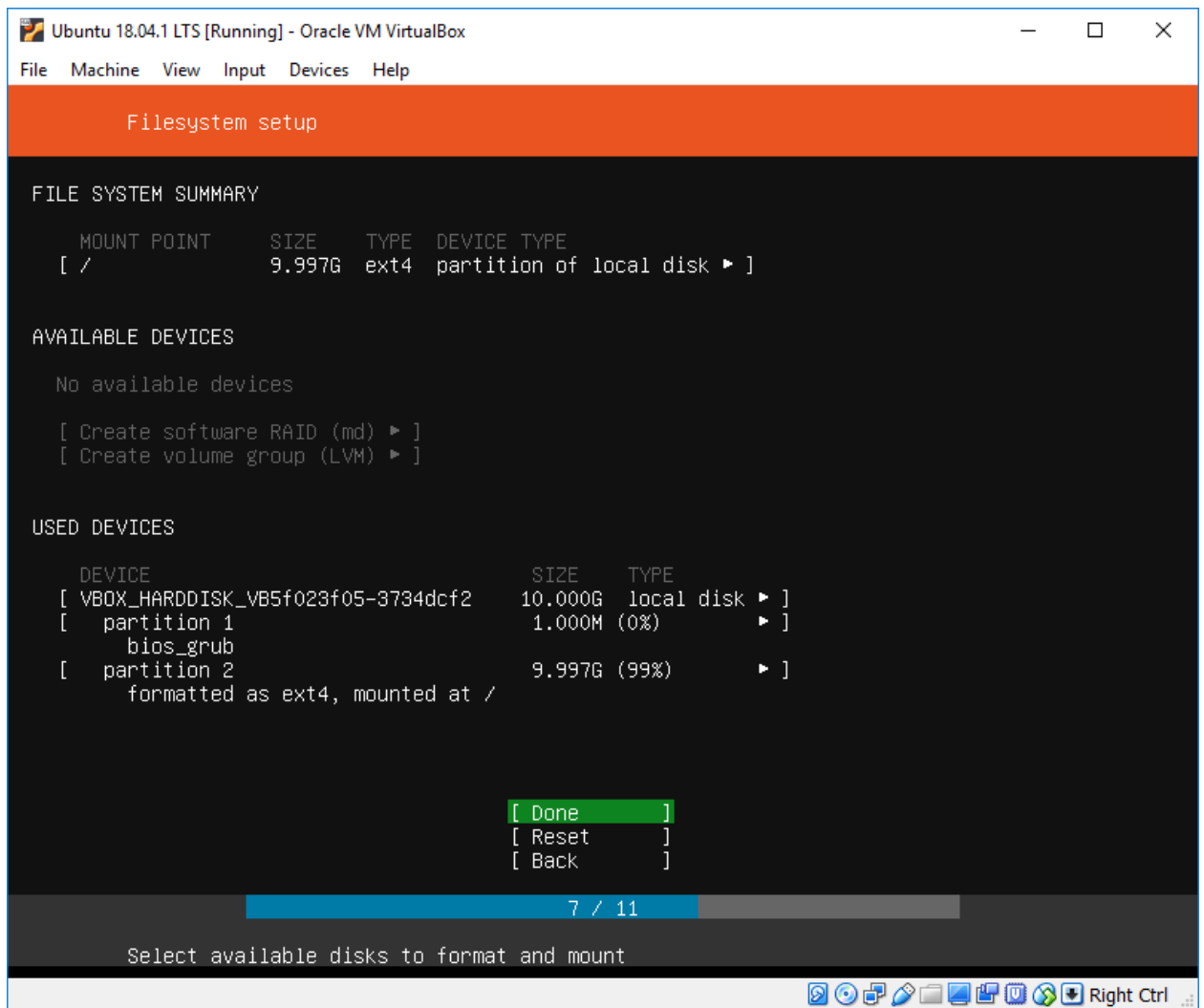


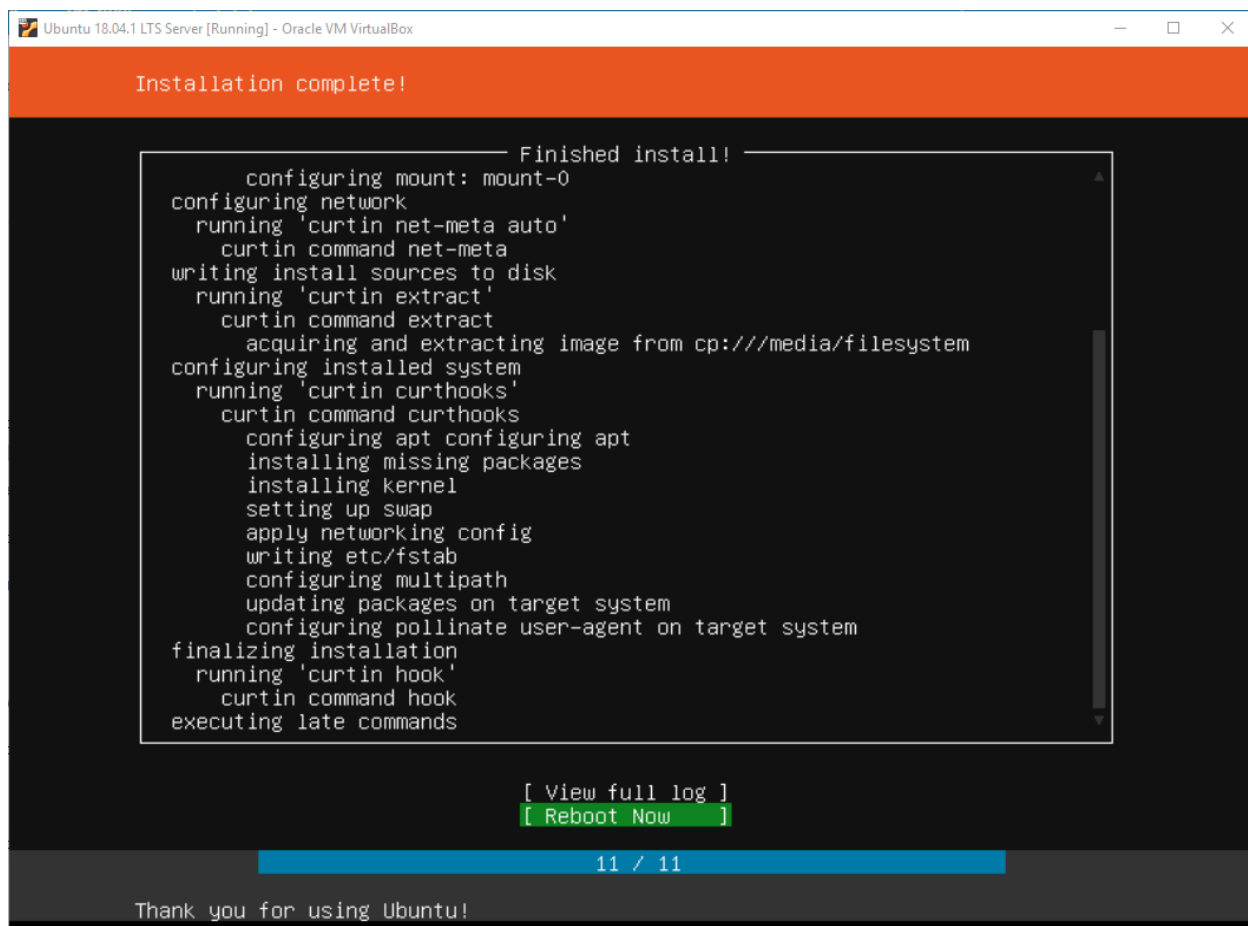
5. Configure the virtual machine
 - a. 1024 MB memory
 - b. Create a virtual hard disk now (10GB)
 - c. Hard disk file type: VDI (VirtualBox Disk Image)
 - d. Storage on physical hard disk dynamically allocated (only use space as it fills up, up to maximum fixed size (will not auto shrink when space freed))





6. Turn on the virtual machine and Install Ubuntu Server by following the on-screen instructions (use default options when prompted).





7. Reboot the virtual machine when installation is complete
8. SSH into the VM using the IP address displayed when the VM reboots (we like to use our own terminals instead of the clunky Oracle VirtualBox terminal)

```

+ ssh kbmakevin@192.168.0.26
The authenticity of host '192.168.0.26 (192.168.0.26)' can't be established.
ECDSA key fingerprint is SHA256:1PftfsyqsvrxkC+yLqemLBiFc0KiRlumRzZYilulLFM.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.0.26' (ECDSA) to the list of known hosts.
kbmakevin@192.168.0.26's password:
Welcome to Ubuntu 18.04.1 LTS (GNU/Linux 4.15.0-34-generic x86_64)

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

System information as of Mon Sep 17 19:28:07 UTC 2018

System load:  0.44           Processes:           90
Usage of /:   39.9% of 9.78GB Users logged in:     1
Memory usage: 13%           IP address for enp0s3: 192.168.0.26
Swap usage:   0%

40 packages can be updated.
16 updates are security updates.

Last login: Mon Sep 17 19:27:25 2018
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

kbmakevin@kempha:~$ |

```

9. Install snapd by entering the following command in the terminal:

sudo apt install snapd

10. This Nextcloud snap is available in the store for release. Install via the command:

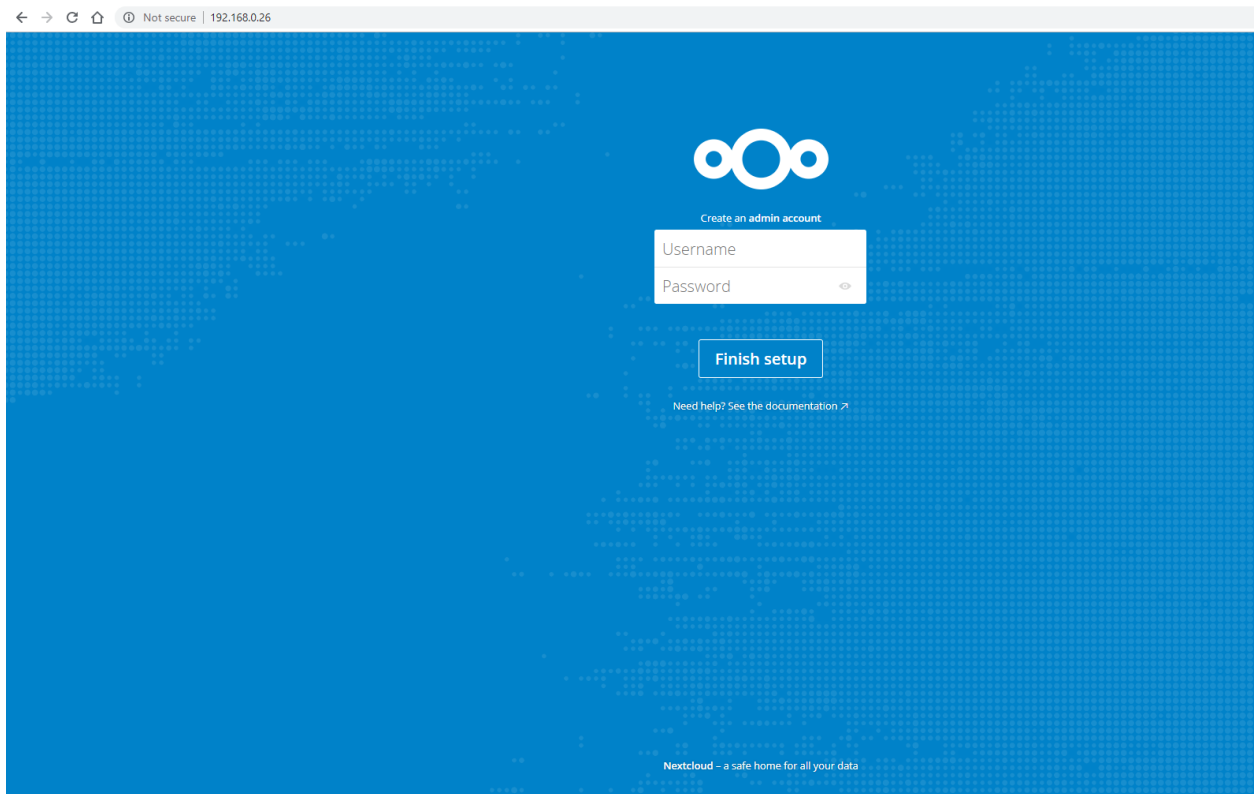
sudo snap install nextcloud

```

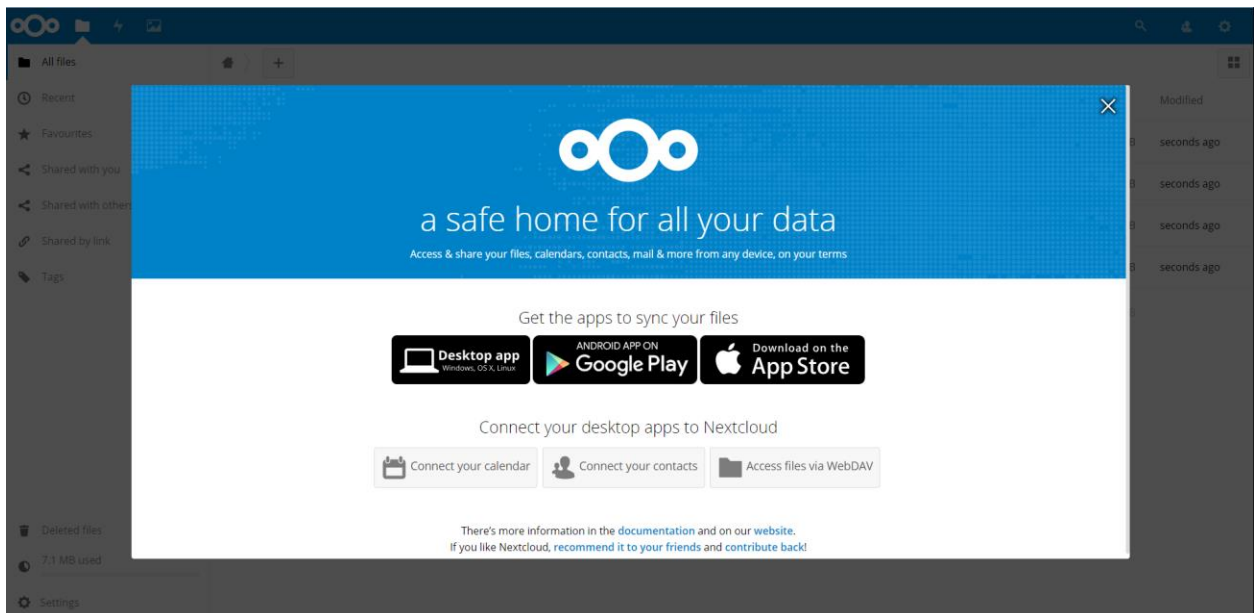
kbmakevin@kempha:~$ sudo apt install snapd
[sudo] password for kbmakevin:
Reading package lists... Done
Building dependency tree
Reading state information... Done
snapd is already the newest version (2.34.2+18.04).
0 upgraded, 0 newly installed, 0 to remove and 43 not upgraded.
kbmakevin@kempha:~$ snap find nextcloud
Name                Version      Publisher    Notes    Summary
nextcloud-client    2.3.3+gitab40efe nextcloud    -        Nextcloud Desktop Client
nextcloud-port8080  1.01        arcticslyfox -        Nextcloud Server
nextcloud-snap-abacao 11.0.3snap4 abacao      -        Nextcloud Server
nextcloud-nextant  11.0.0snap3 rmescandon  -        Nextcloud Server + search support
nextcloud-abacao    11.0.3snap4 abacao      -        Nextcloud Server
nextcloud            13.0.5snap1 nextcloud    -        Nextcloud Server - A safe home for all your data
cashbox-nextcloud   11.0.2snap2 cashbox      -        Nextcloud Server for www.cashBOX.plus
nextcloudsnap       12.0.4snap1 oscarbrolin -        Nextcloud Server - A safe home for all your data
qownnotes           18.09.1     pbek        -        Plain-text file notepad with markdown support and ownCloud / Nextcloud integration
spreadme             0.29.5snap1 nextcloud    -        Spread.ME audio/video calls and conferences feature for the Nextcloud Snap
test003-nc           13.0.4.snap1 reinism      -        Nextcloud Server - A safe home for all your data
htxucld              12.0.3snap7 htxu        -        Nextcloud Server
solr                  0.1         rmescandon  -        Starts up solr as forking daemon
mdns-hostname        0.0.1       welike      -        mDNS mini-daemon to published hostname.local
kbmakevin@kempha:~$ sudo snap install nextcloud
nextcloud 13.0.5snap1 from 'nextcloud' installed
kbmakevin@kempha:~$ snap list
Name      Version  Rev   Tracking  Publisher  Notes
core      16-2.33.1 4917  stable   canonical  core
nextcloud 13.0.5snap1 8267  stable   nextcloud  -
kbmakevin@kempha:~$ |

```

11. Visit the ipaddress of your virtual machine in your favorite browser to finish the setup of Nextcloud. Upon visiting the Nextcloud installation for the first time, you'll be prompted for an admin username and password.



12. All done! Now you are free to explore the many fascinating features of Nextcloud (able to create users, install apps, and upload files, and much more)! Enjoy 😊!



USING DOCKER IMAGE (CONTAINERS)

PRE-REQUISITES

1. Docker for Windows

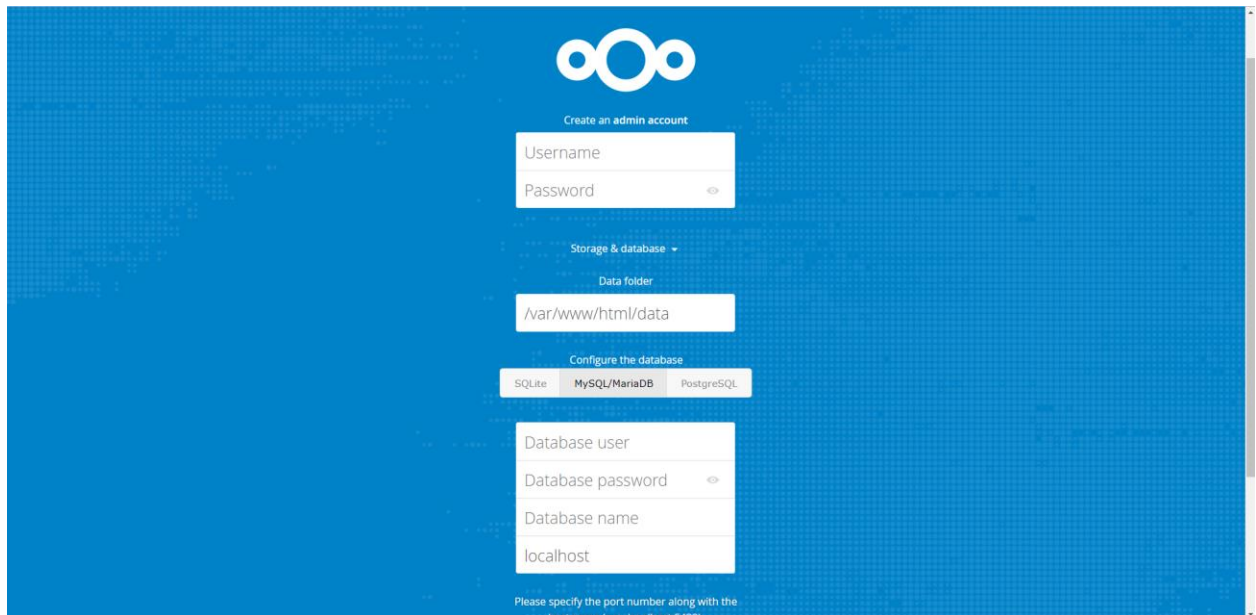
HOW TO INSTALL

1. Open a terminal or cmd prompt
2. Enter in the following command
docker run -d -p 8080:80 nextcloud

```
+ cencol/f2018 sem6/api-engineering-cloud-computing master± docker run -d -p 8080:80 nextcloud
Unable to find image 'nextcloud:latest' locally
latest: Pulling from library/nextcloud
802b00ed6f79: Pull complete
59f5a5a895f8: Pull complete
6898b2dbcfeb: Pull complete
8e0903aaa47e: Pull complete
2961af1e196a: Pull complete
71f7016f79a0: Pull complete
5e1a48e5719c: Pull complete
7ae5291984f3: Pull complete
725b65166f31: Pull complete
e90b121f9520: Pull complete
b5a272809bbd: Pull complete
f045f3ae0e2b: Pull complete
7f51c9ea2d8e: Pull complete
5aa9d0ed164a: Pull complete
8eea44e2bfc7: Pull complete
5302ebd5abce: Pull complete
78f0335dec3: Pull complete
1a2f85124682: Pull complete
ed4cec78a159: Pull complete
a68e1b656d3d: Pull complete
d0b66f00fda7: Pull complete
45c9777c18b5: Pull complete
Digest: sha256:d1de54637e25e12aaa7aacfd7a9b38ebfb89f3112f71d9f03d9576975476291f
Status: Downloaded newer image for nextcloud:latest
864b086bdb79b378a116874a01b20b59e36d27541ad3d77e340e7eb2aa910764
```

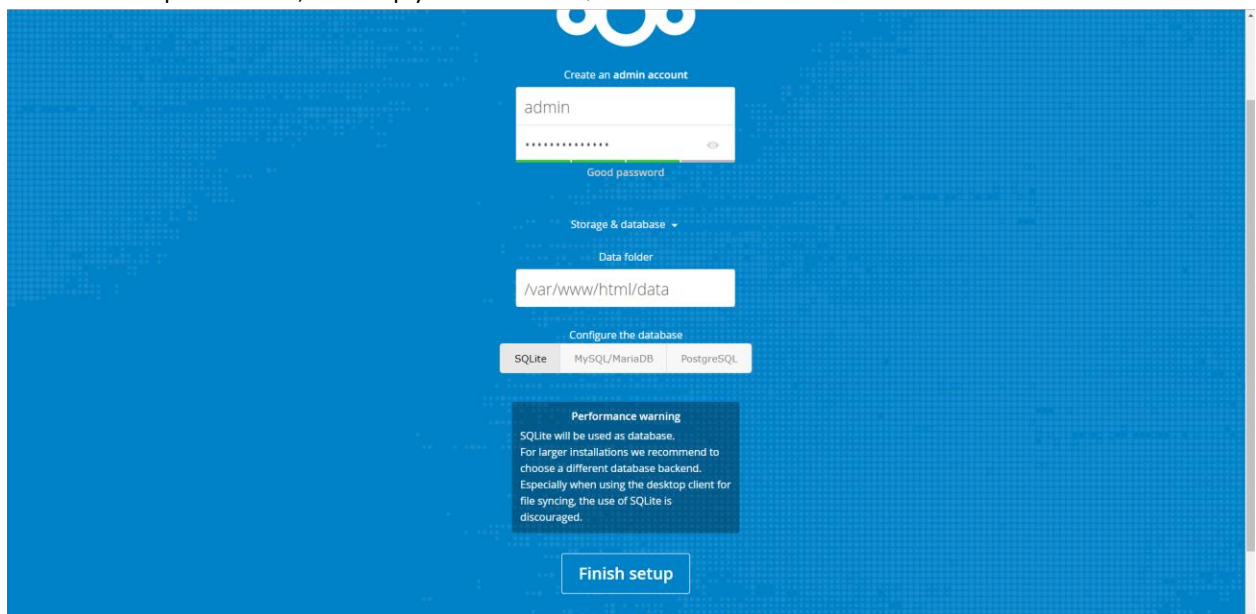
CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
864b086bdb79	nextcloud	"/entrypoint.sh apac."	11 minutes ago	Up 11 minutes	0.0.0.0:8080->80/tcp	musung_yalow

3. then go to <https://localhost:8080>
For Production, use MySQL/MariaDB/PostgreSQL:



The screenshot shows the Next.js 10.0.0 installation configuration screen. At the top is the Next.js logo. Below it is the "Create an admin account" section with input fields for "Username" and "Password". The "Storage & database" section is expanded, showing the "Data folder" as "/var/www/html/data". Under "Configure the database", the "SQLite" tab is selected. Below this are input fields for "Database user", "Database password", and "Database name", with "localhost" entered in the "Database name" field. A note at the bottom says "Please specify the port number along with the host name (e.g. localhost:5432)".

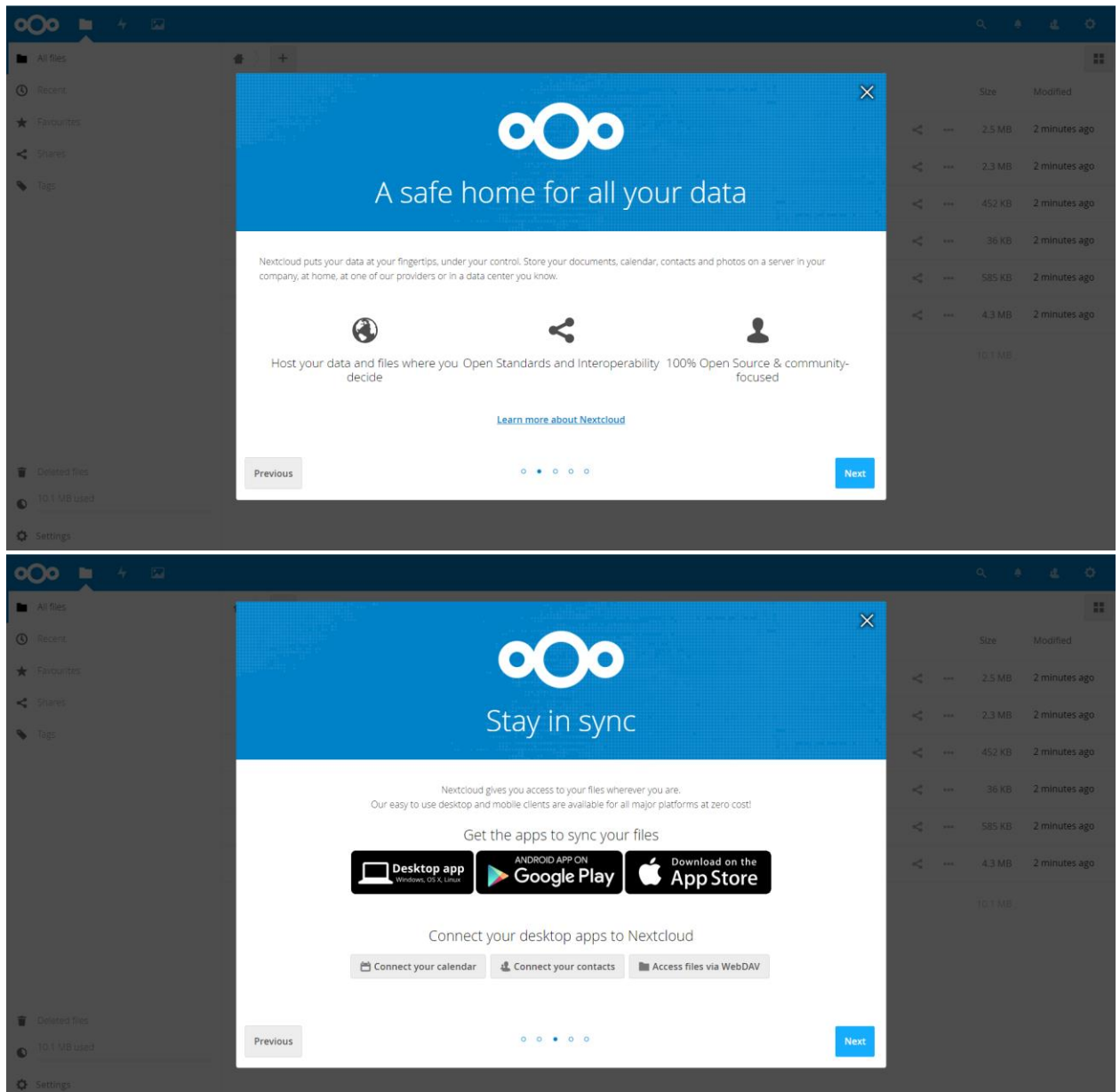
For our developmental use, can simply use default SQLite:

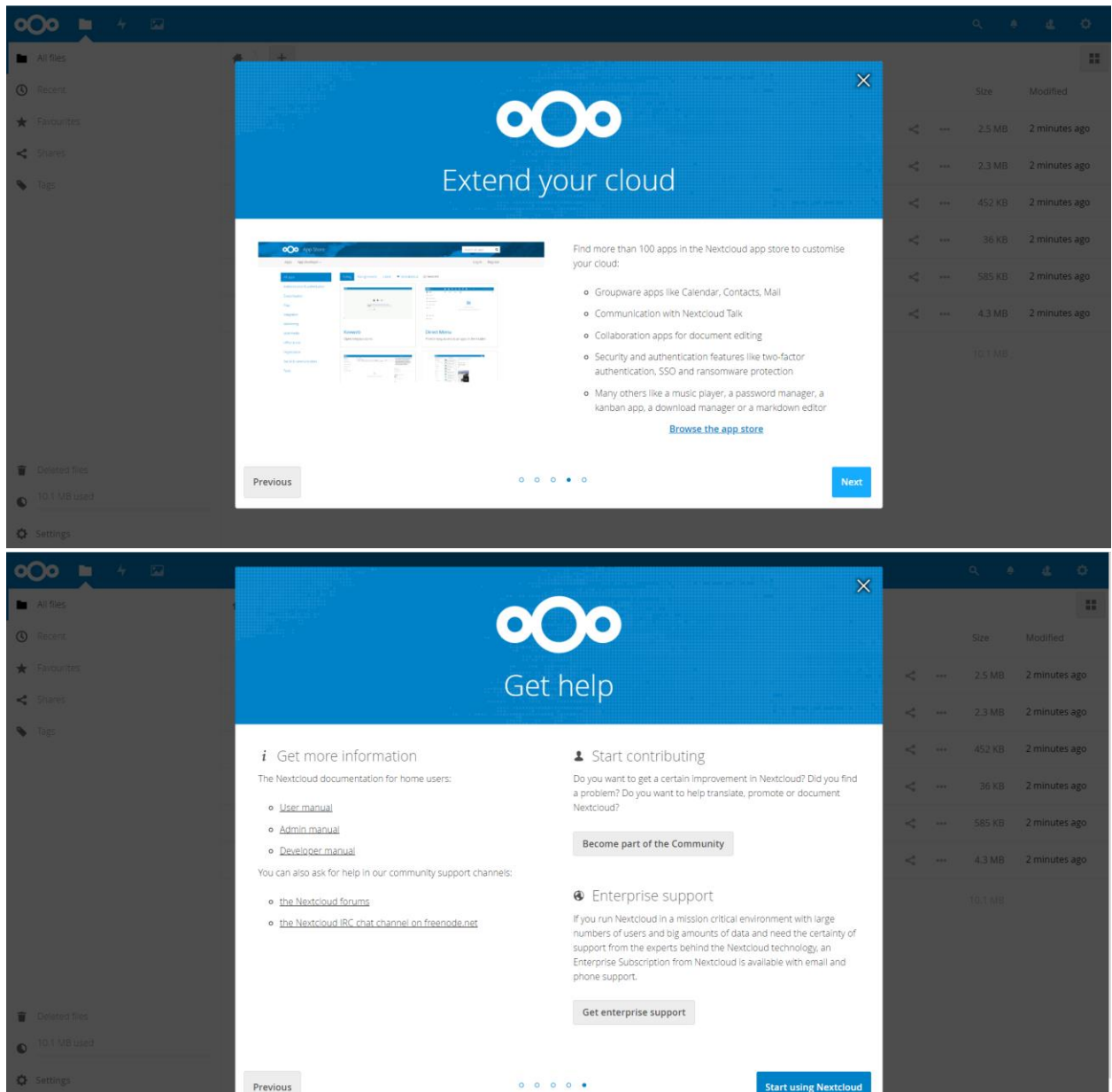


This screenshot shows the same Next.js 10.0.0 installation configuration screen, but with the "SQLite" tab selected under "Configure the database". The "Database user" field is now "admin" and the "Database password" field is filled with dots. A "Good password" message is displayed below the password field. The "Data folder" remains "/var/www/html/data". A "Performance warning" box is now visible, stating: "SQLite will be used as database. For larger installations we recommend to choose a different database backend. Especially when using the desktop client for file syncing, the use of SQLite is discouraged." At the bottom, there is a "Finish setup" button.

4. Login with the created admin account:







5. All done, you may now proceed to create User Groups, User Accounts, add Applications to your cloud, and all sorts of other wonderful things!

USING NEXTCLOUD

There are many Nextcloud features. Here are some of the features we have investigated so far:

CREATING USER ACCOUNTS AND GROUPS:

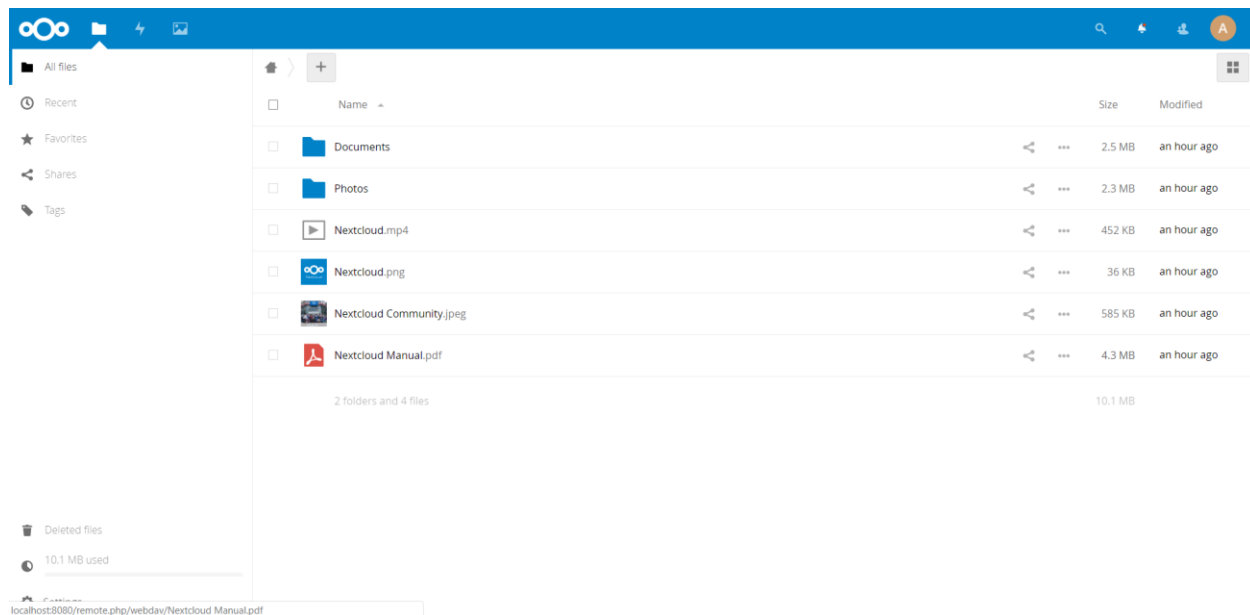
	Username	Display name	Password	Email	Groups	Quota	Language	Storage location	User backend	Last login
Everyone	+	Username	Display name	Password	Email	Add user in group	Default quota	Default		✓
Admins	A	admin	admin	New password	admin	Unlimited	English (US)	/var/www/html/data/ Database		43 minutes ago

Settings

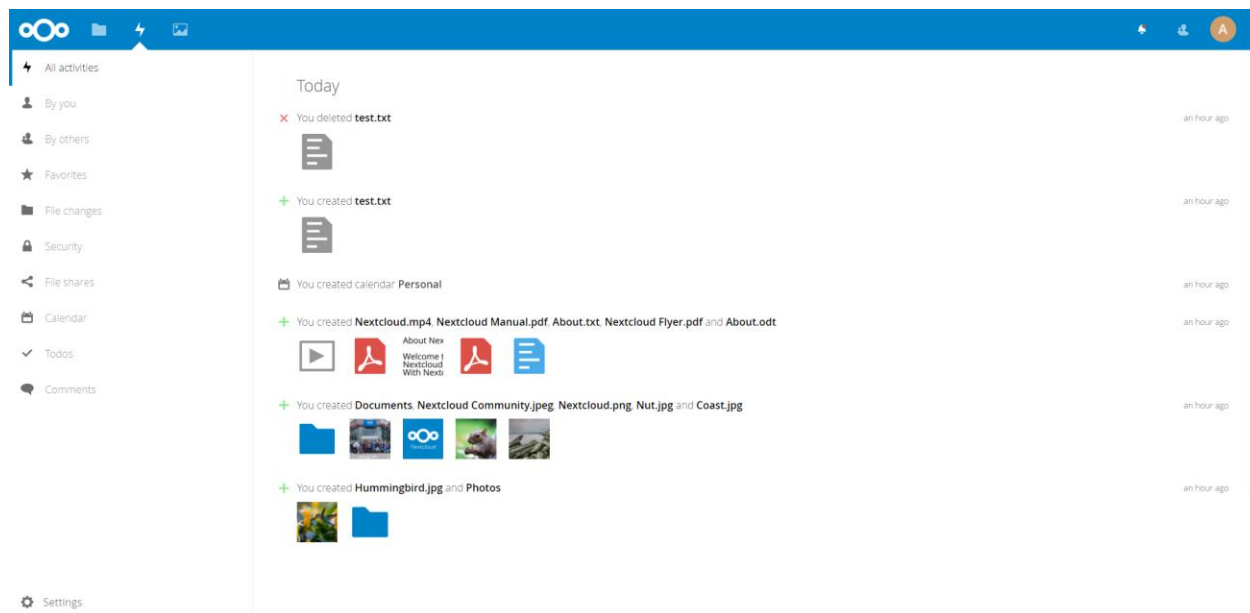
APPLICATION MANAGEMENT WITH NEXTCLOUD:

Name	Version	Status	Disable
Accessibility	1.0.1	✓ Official	Disable
Activity	2.7.0	✓ Official	Disable
Collaborative tags	1.4.0	✓ Official	Disable
Comments	1.4.0	✓ Official	Disable
Deleted files	1.4.1	✓ Official	Disable
Federation	1.4.0	✓ Official	Disable
File sharing	1.6.2	✓ Official	Disable
First run wizard	2.3.0	✓ Official	Disable
Gallery	18.1.0	✓ Official	Disable
Log Reader	2.0.0	✓ Official	Disable
Monitoring	1.4.0	✓ Official	Disable
Nextcloud announcements	1.3.0	✓ Official	Disable
Notifications	2.2.1	✓ Official	Disable
Passwords	1.4.0	✓ Official	Disable

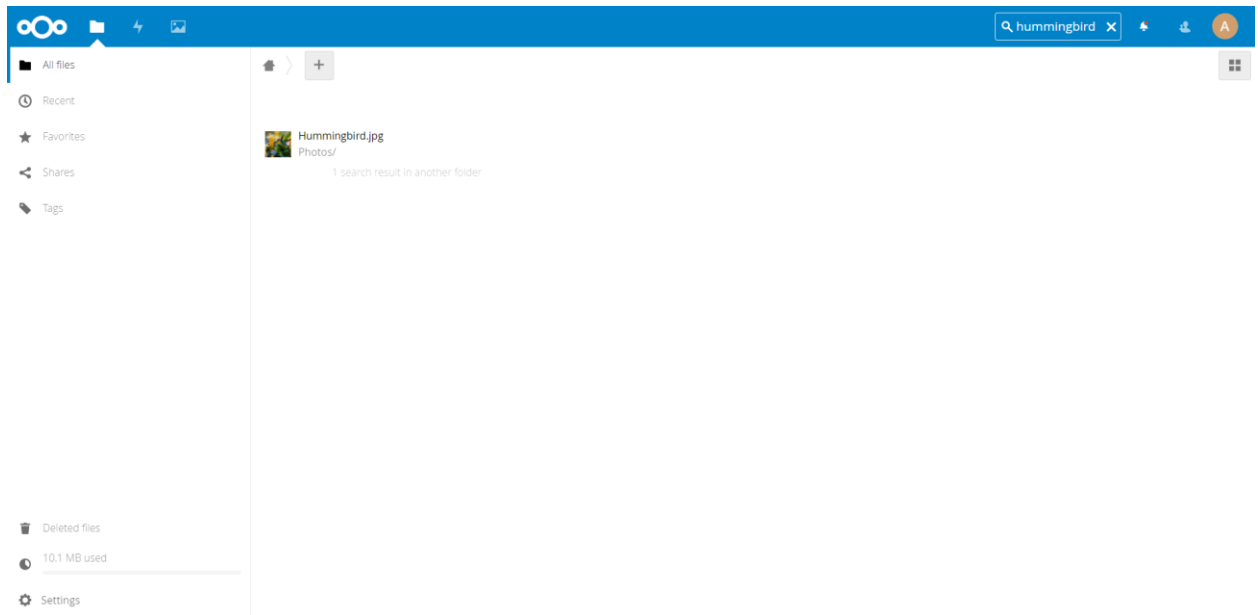
FILE MANAGEMENT ON THE CLOUD



VIEWING THE CLOUD'S ACTIVITIES

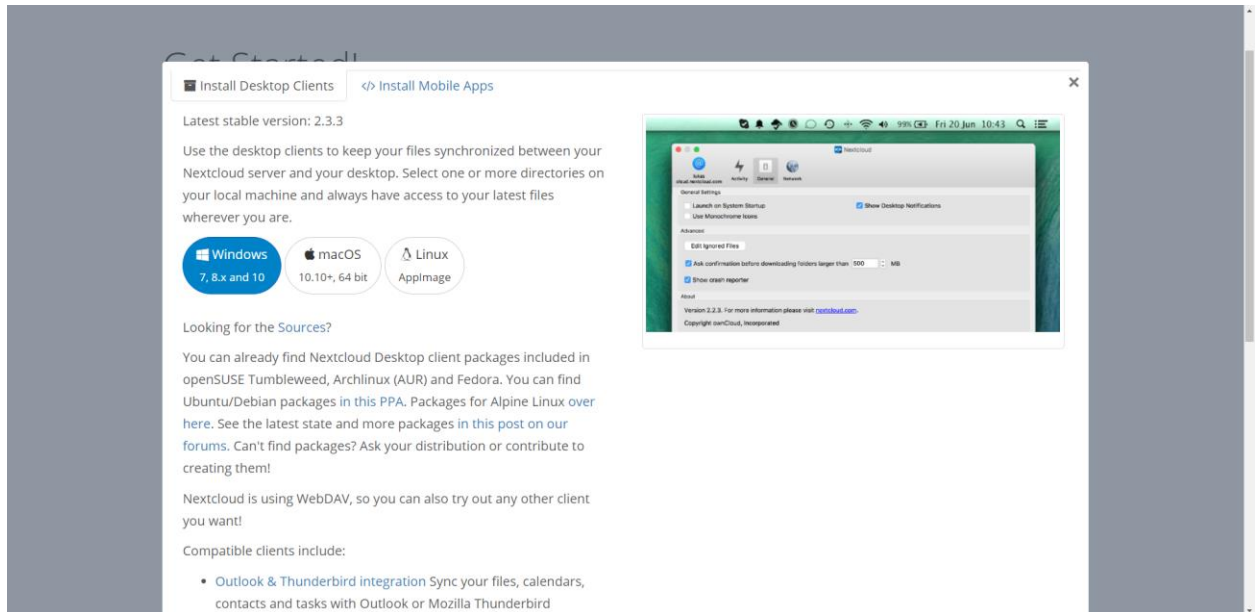


SEARCHING THE CLOUD FOR SPECIFIC FILES

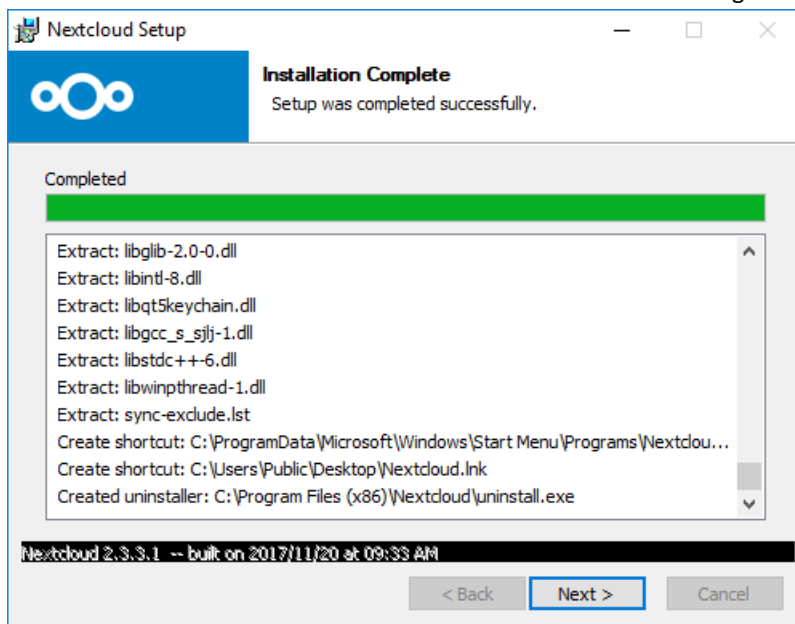


NEXTCLOUD CLIENT SETUP

1. Install Nextcloud clients (Desktop, Mobile) by downloading and running the installer from <https://nextcloud.com/install/#install-clients>



Follow the instructions from the installer and use the default settings when prompted for configurations:



- Nextcloud Connection Wizard

Connect to Nextcloud

Setup Nextcloud server

Server Address

Next >
2.

Nextcloud Connection Wizard

Connect to Nextcloud

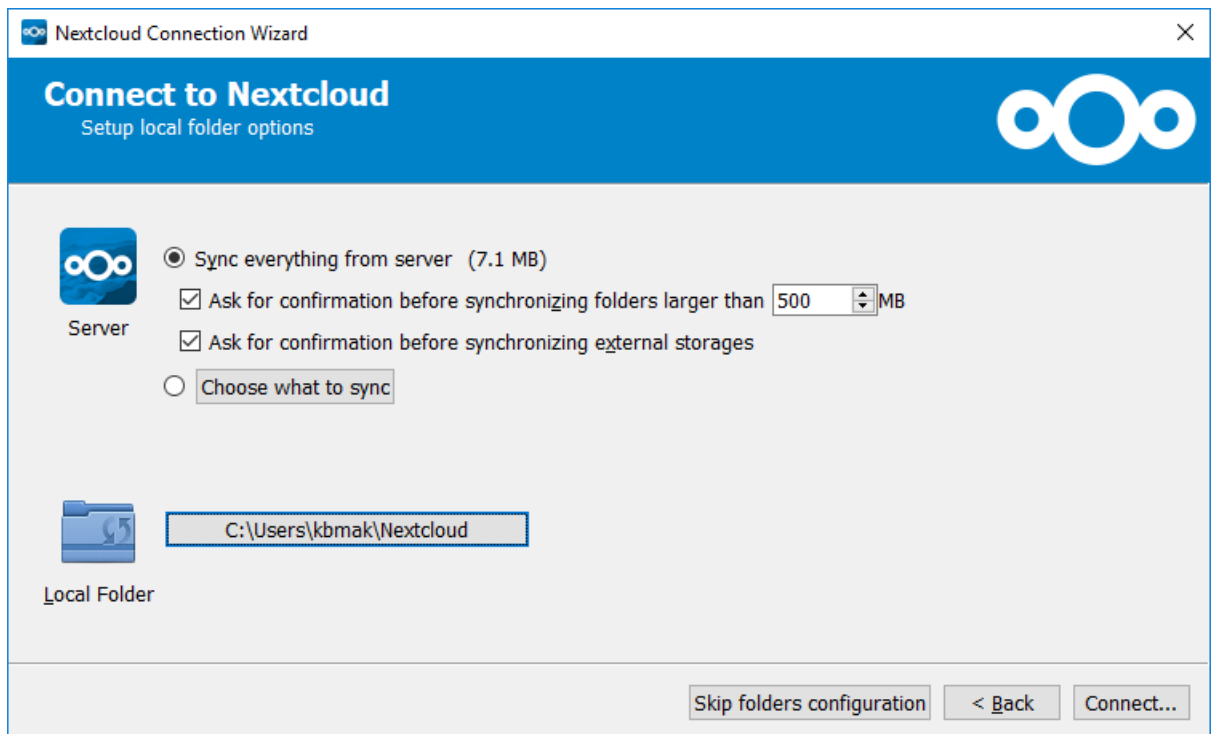
Enter user credentials

[Click here](#) to request an app password from the web interface.

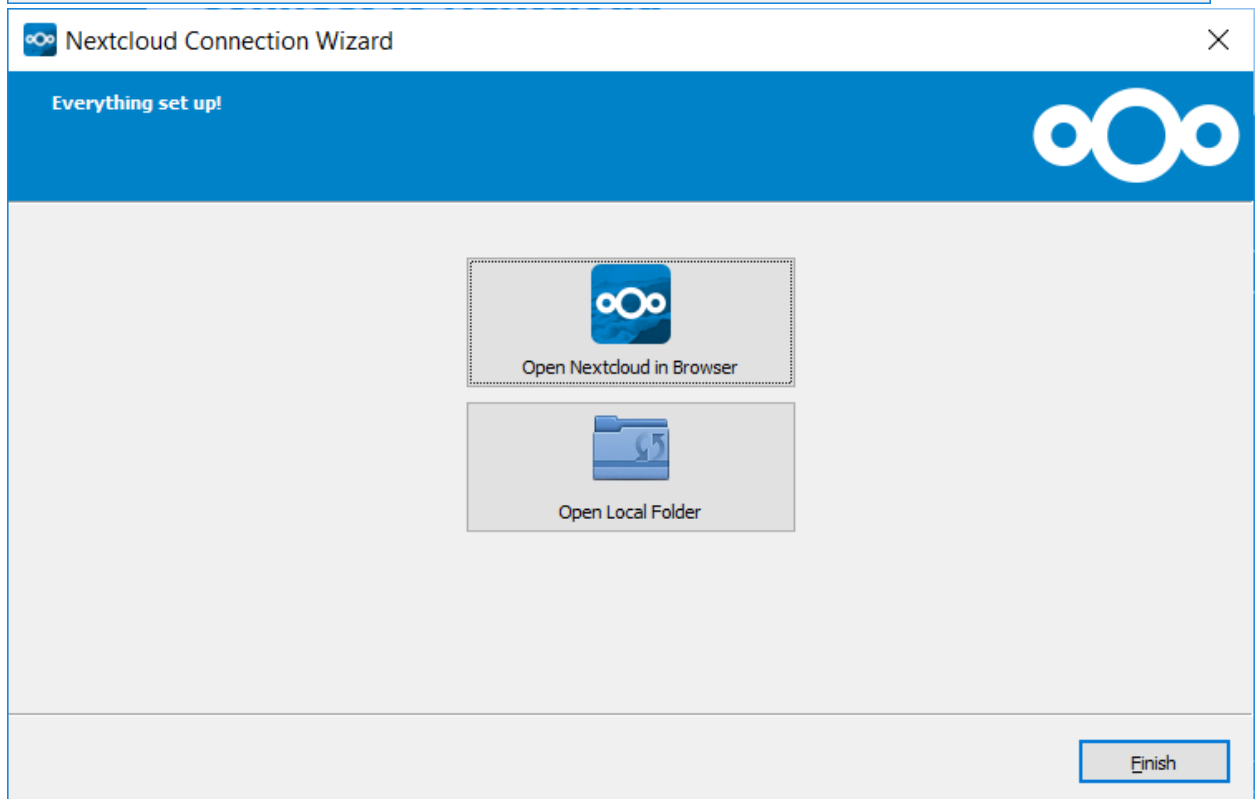
Username

Password

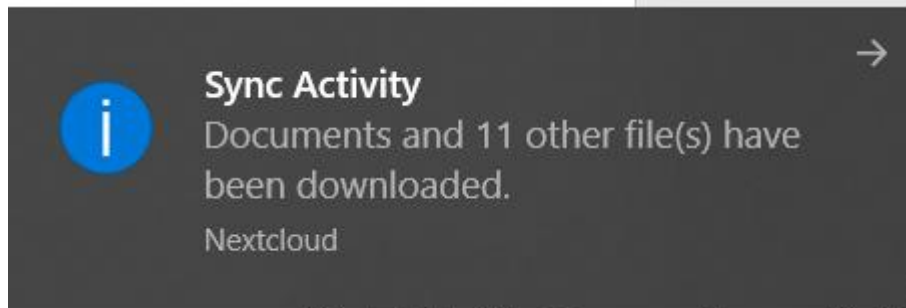
< Back Next >
- 3.



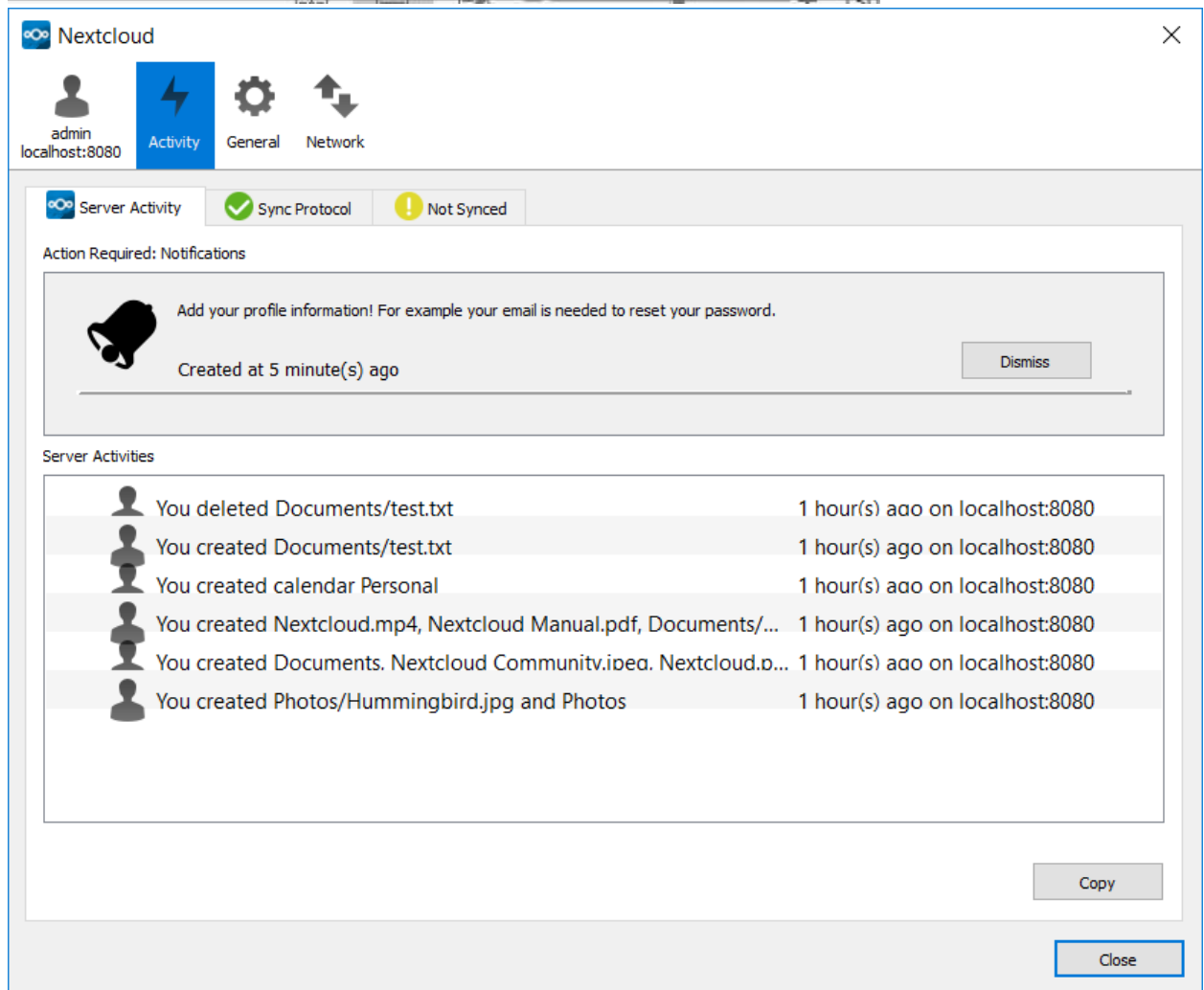
4.



5.



6.



7.

Nextcloud
×

admin
localhost:8080
Activity
General
Network

Server Activity
Sync Protocol
Not Synced

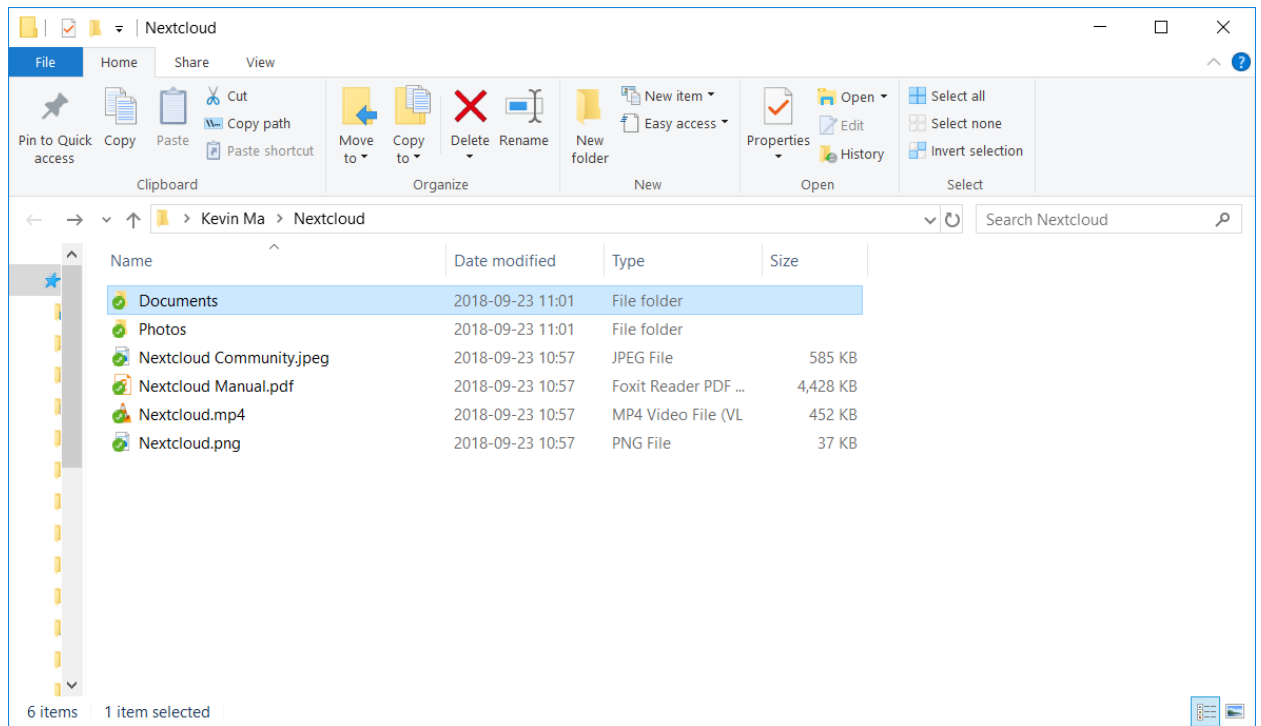
Local sync protocol

Time	File	Folder	Action	Size
2018-09-2...:09:24 AM	Documents/test.txt	Nextcloud	Deleted	
2018-09-2...:08:24 AM	Documents/test.txt	Nextcloud	Downloaded	1 B
2018-09-2...:01:17 AM	Photos/Hummingbird.jpg	Nextcloud	Downloaded	572 KB
2018-09-2...:01:17 AM	Documents/About.odt	Nextcloud	Downloaded	76 KB
2018-09-2...:01:17 AM	Photos/Nut.jpg	Nextcloud	Downloaded	933 KB
2018-09-2...:01:16 AM	Photos/Coast.jpg	Nextcloud	Downloaded	801 KB
2018-09-2...:01:16 AM	Nextcloud Manual.pdf	Nextcloud	Downloaded	4.3 MB
2018-09-2...:01:16 AM	Nextcloud.png	Nextcloud	Downloaded	36 KB
2018-09-2...:01:16 AM	Photos	Nextcloud	Downloaded	
2018-09-2...:01:16 AM	Nextcloud.mp4	Nextcloud	Downloaded	452 KB
2018-09-2...:01:16 AM	Documents/N...d Flyer.pdf	Nextcloud	Downloaded	2.4 MB
2018-09-2...:01:16 AM	Nextcloud C...munity.jpeg	Nextcloud	Downloaded	585 KB
2018-09-2...:01:16 AM	Documents/About.txt	Nextcloud	Downloaded	1 KB
2018-09-2...:01:16 AM	Documents	Nextcloud	Downloaded	

Copy

Close

8.



9.