ANISH ADNANI

D17B / 01

CCL

(1)

EXPERIMENT 7

Aim: Installation and configuration of storage virtualization using owncloud.

- Configure the user management
- Configure the security groups with user management

Theory:

Owncloud is a suite of client-server software for creating and using file hosting services owncloud functionality has similarities to the widely used Dropbox. The primary functional difference between owncloud and Dropbox is that owncloud does not offer data centre capacity to host stored files. The server edition of owncloud is free and opensource, thereby allowing anyone to install and operate it without charge on their own private server

owncloud enables you to share and sync data and keep it safe at the same time, on all platforms. It controls and monitors access and enables collaboration across devices, teams and continents alike. Without risking data loss, theft or infringement on privacy regulations

Features:

- open ecosystem- For the greatest possible flexibility and integration into existing business process.

- open source - for highest level of security and customizability

Designed for enterprises - modern user experience, highly adaptable and easy to administer.

* Installation Process:
Owncloud provides appliance feature where we can download a preconfigured owncloud machine for different virtual environment like ESx, VirtualBox, vmware workstation, etc. It is built on VCS

User management
Every user account has these properties
→ Login Name (username)
The unique ID of an owncloud user, and it cannot be changed

→ Full Name
The user's display name that appears on file shares, the owncloud web interface, and emails. Admins and users may change the Full Name anytime. If the Full name is not set it defaults to the login name

→ Password
The admin sets the new user's first password

→ Email:

The admin sets the new user's Email. The user then gets an Email to set his password.

→ Group:

You may create group and assign group memberships to users. By default new users are not assigned to any groups

→ Group Admin:

Group admins are granted administrative privileges on specific groups, and can add and remove users from their groups

→ Quota:

The maximum disk space assigned to each user. Any user that exceeds the quota cannot upload or sync data. You have option to include external storage in user quotas

Security Groups wrt user management

- Every user is assigned with some storage space
- User can share the uploaded file or folder with other user groups or specific user.
- Files uploaded by individual user and secured and cannot be accessed by others without permission.

Advantages of owncloud

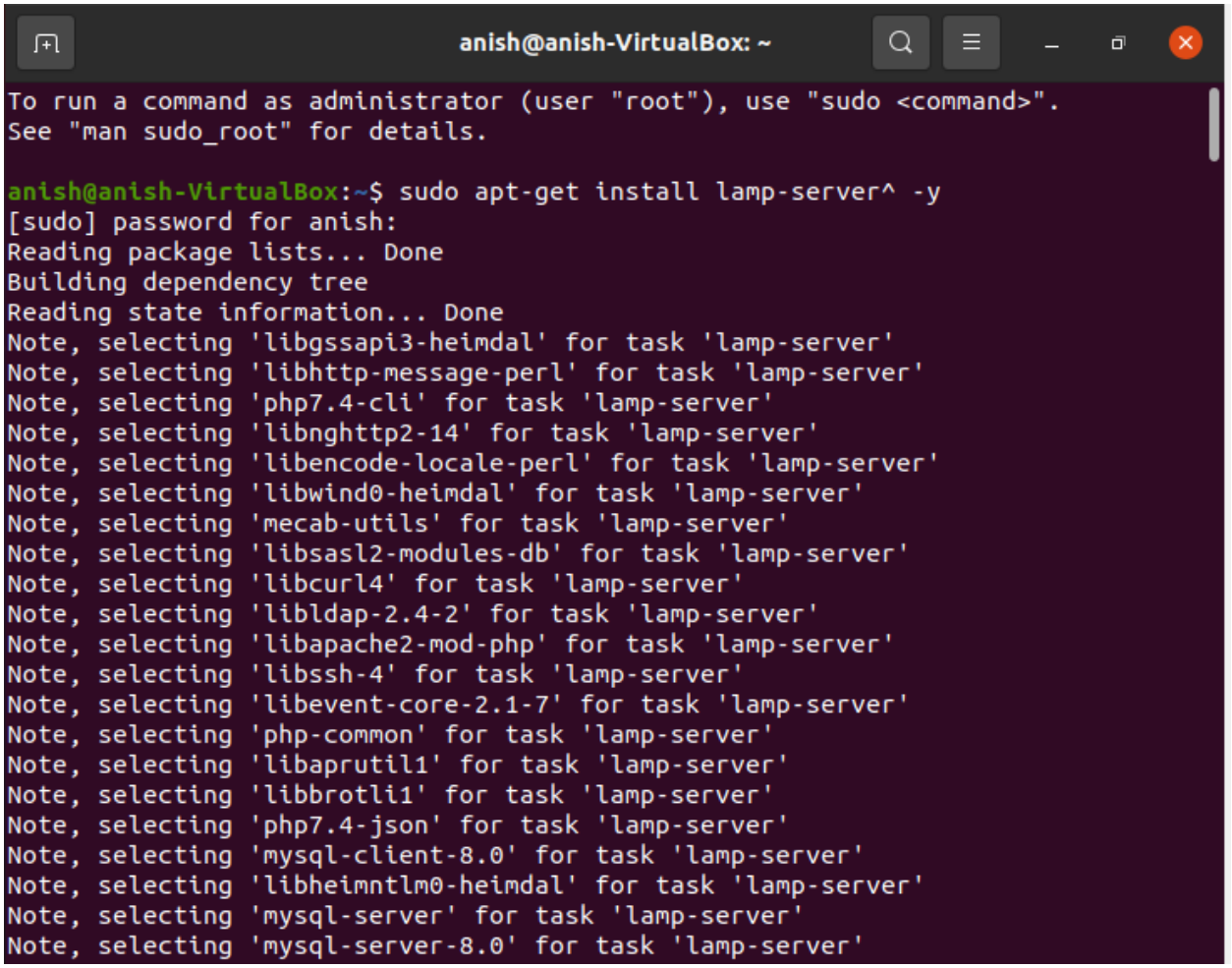
- owncloud has a nice filing system where users can create lots of different folders and subfolders to help keep things organized.
- owncloud has lots of space depending on your selections
- Easy to upload and download documents
- scalable and lightweight solution for cloud storing

Disadvantages of owncloud

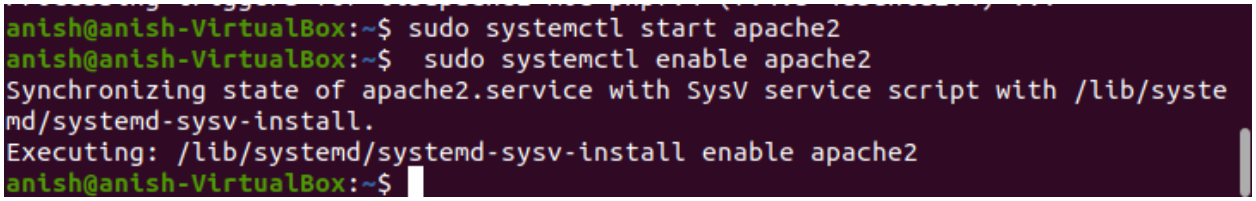
- The web user interface can be a little slow sometimes
- No online video viewer by default
- No online document editor

Conclusion: Performed installation and configuration of owncloud and learned user management

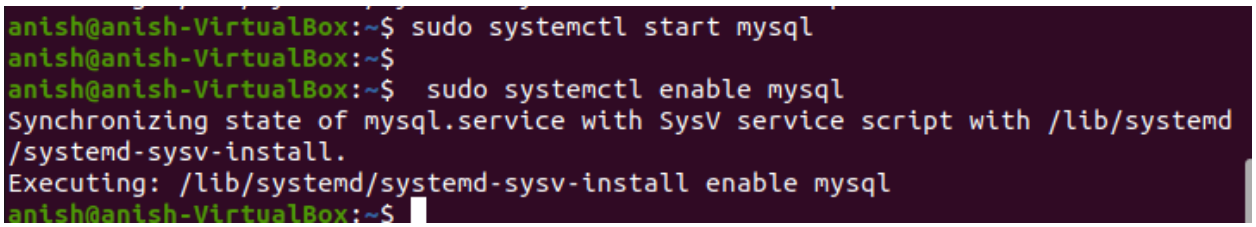
Installing lamp stack



Start and enable apache2



Start and enable mysql



Set mysql admin password and secure the installation

```
anish@anish-VirtualBox:~$  sudo mysql_secure_installation

Securing the MySQL server deployment.

Connecting to MySQL using a blank password.

VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?

Press y|Y for Yes, any other key for No: n
Please set the password for root here.

New password:

Re-enter new password:
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.
```

Install php and required packages

```
anish@anish-VirtualBox:~$ sudo apt-get install php php-opcache php-gd php-curl
php-mysqlnd php-intl php-json php-ldap php-mbstring php-mysqlnd php-xml php-zip
 -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'php7.4-opcache' instead of 'php-opcache'
Note, selecting 'php7.4-mysql' instead of 'php-mysqlnd'
```

Restart apache to save changes

```
anish@anish-VirtualBox:~$ sudo systemctl restart apache2
```

Access mariadb console

```
anish@anish-VirtualBox:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.23-0ubuntu0.20.04.1 (Ubuntu)

Copyright (c) 2000, 2021, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

mysql>
```

create owncloud database

```
mysql> CREATE DATABASE owncloud db;
Query OK, 1 row affected (0.01 sec)
```

Create new user with privileges

```
mysql> CREATE USER 'owncloud user'@'localhost' IDENTIFIED BY 'PASSWORD';
Query OK, 0 rows affected (0.01 sec)

mysql> GRANT ALL ON *.* TO 'owncloud user'@'localhost';
Query OK, 0 rows affected (0.01 sec)
```

Flush privileges

```
mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.02 sec)

mysql> exit
Bye
```

Download owncloud

```
anish@anish-VirtualBox:~$  wget https://download.owncloud.org/community/owncloud-10.5.0.zip
--2021-03-17 21:21:46--  https://download.owncloud.org/community/owncloud-10.5.0.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
```

Unzip downloaded file

```
anish@anish-VirtualBox:~$ unzip owncloud-10.5.0.zip
```

Move the new directory to apache root

```
anish@anish-VirtualBox:~$ sudo mv owncloud /var/www/html/
anish@anish-VirtualBox:~$
```

Change ownership of owncloud directoy

```
anish@anish-VirtualBox:~$ sudo chown -R www-data: /var/www/html/owncloud
```

Apache configuration file

```
  GNU nano 4.8      /etc/apache2/sites-available/owncloud.conf
<VirtualHost \*:80>
     ServerAdmin admin@localhost
     DocumentRoot /var/www/html/owncloud
     ServerName localhost
    <Directory /var/www/html/owncloud>
         Options FollowSymlinks
         AllowOverride All
         Require all granted
     </Directory>

ErrorLog ${APACHE_LOG_DIR}/example.com_error.log

CustomLog ${APACHE_LOG_DIR}/your-domain.com_access.log combined

</VirtualHost>
```

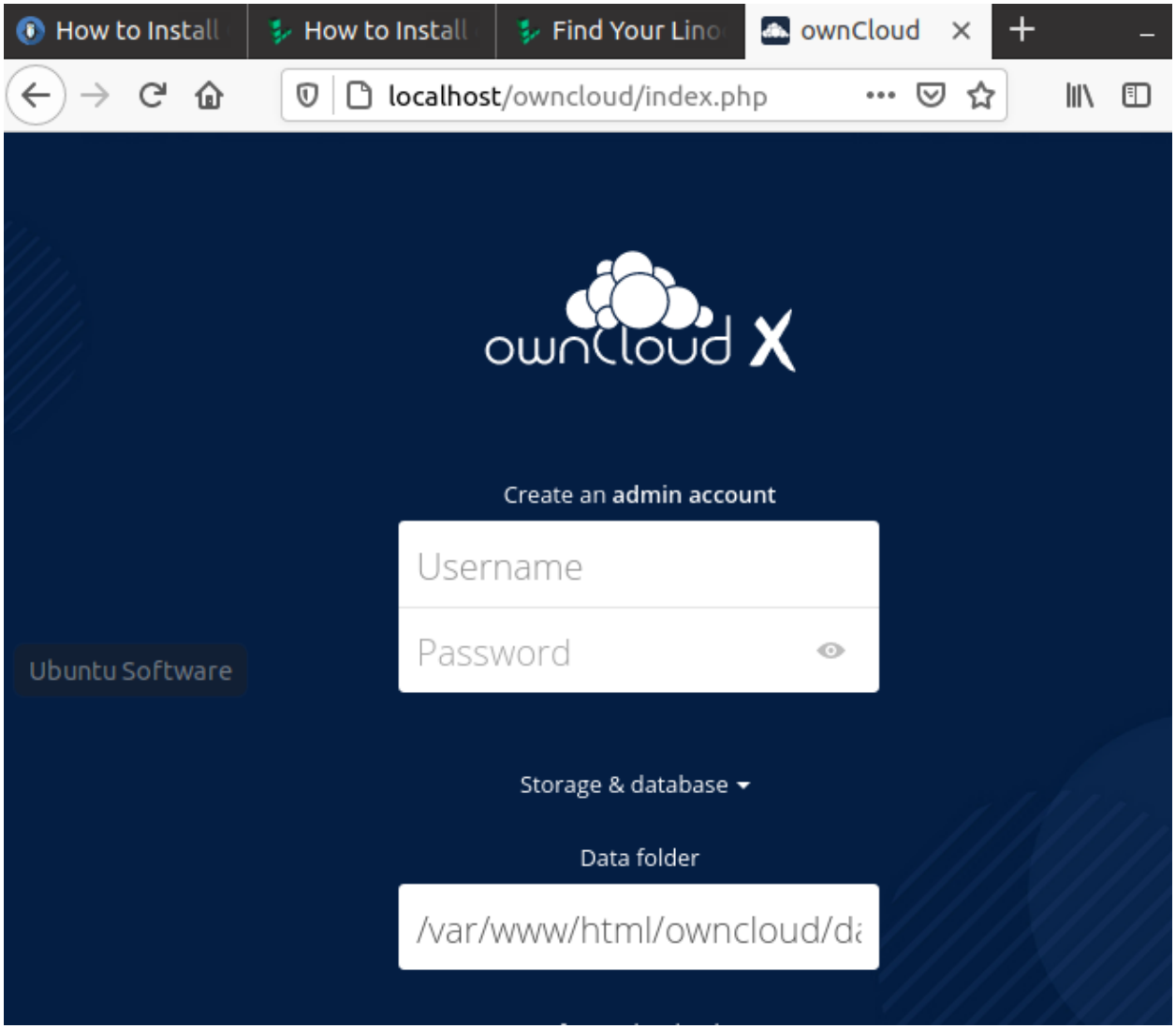
Enable rewrite, mime, unique_id apache modules

```
anish@anish-VirtualBox:~$ sudo a2enmod rewrite mime unique_id
Enabling module rewrite.
Module mime already enabled
Enabling module unique_id.
To activate the new configuration, you need to run:
  systemctl restart apache2
anish@anish-VirtualBox:~$
```

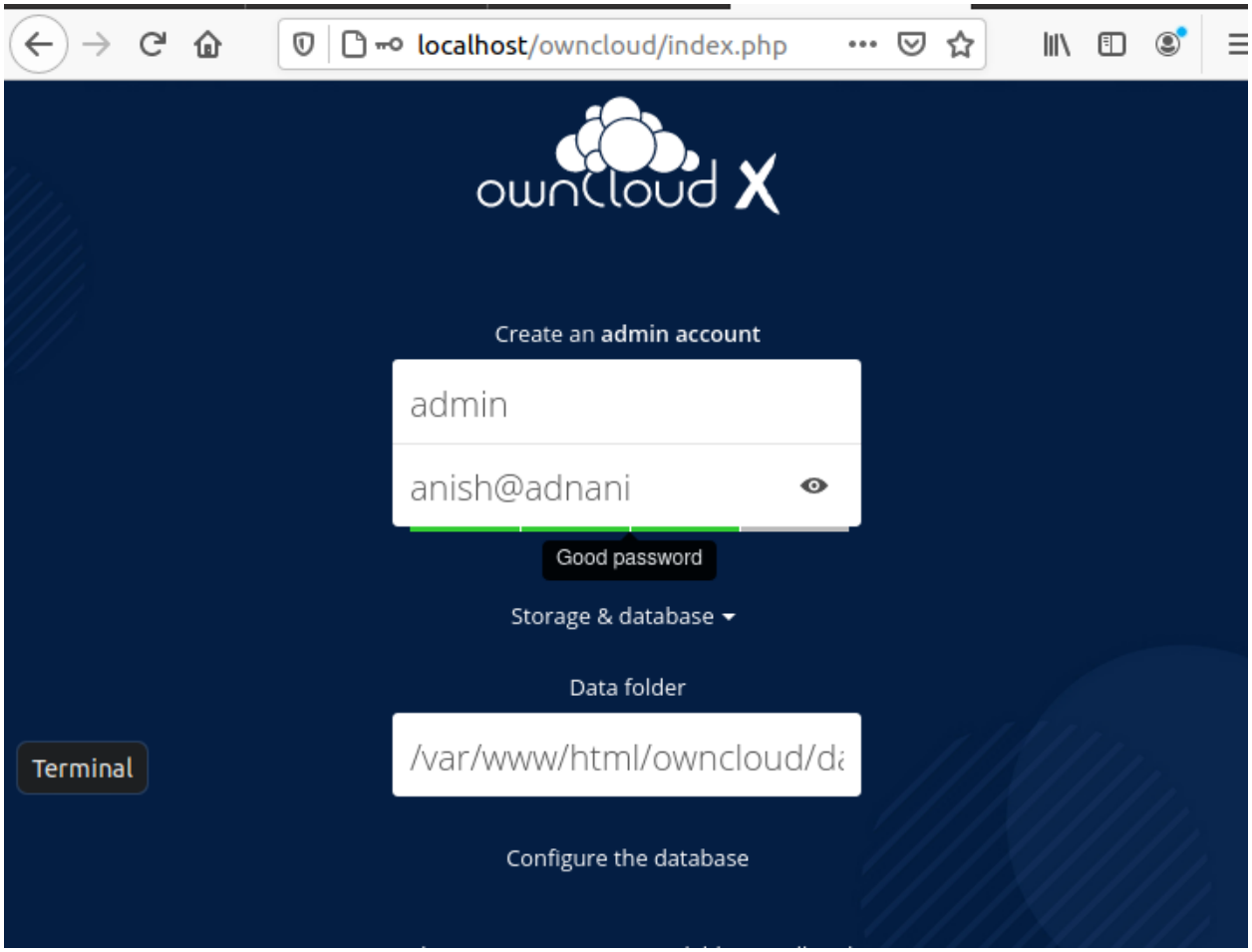
Restart apache server

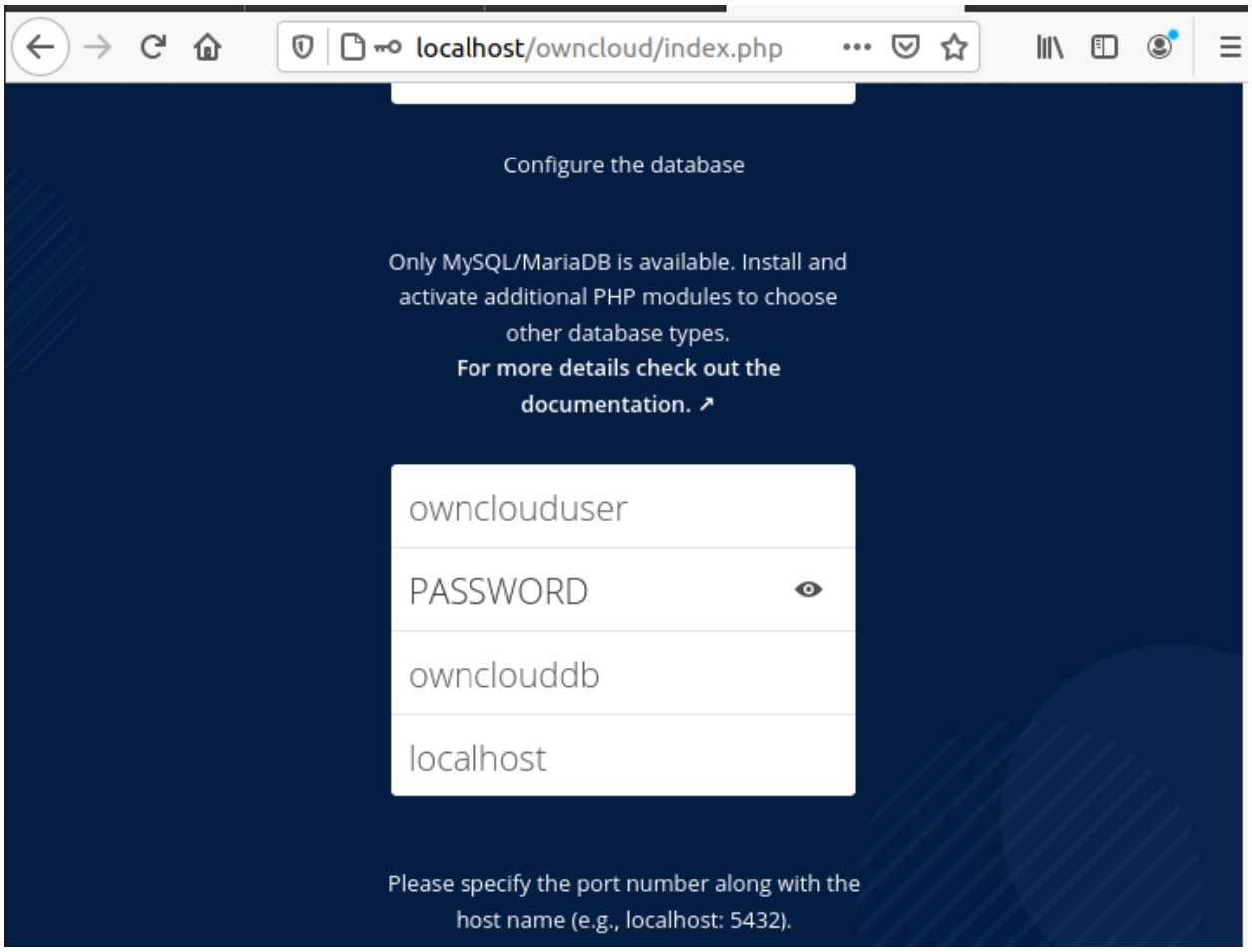
```
anish@anish-VirtualBox:~$ sudo systemctl restart apache2
anish@anish-VirtualBox:~$
```

Owncloud successfully installed



Creating admin user

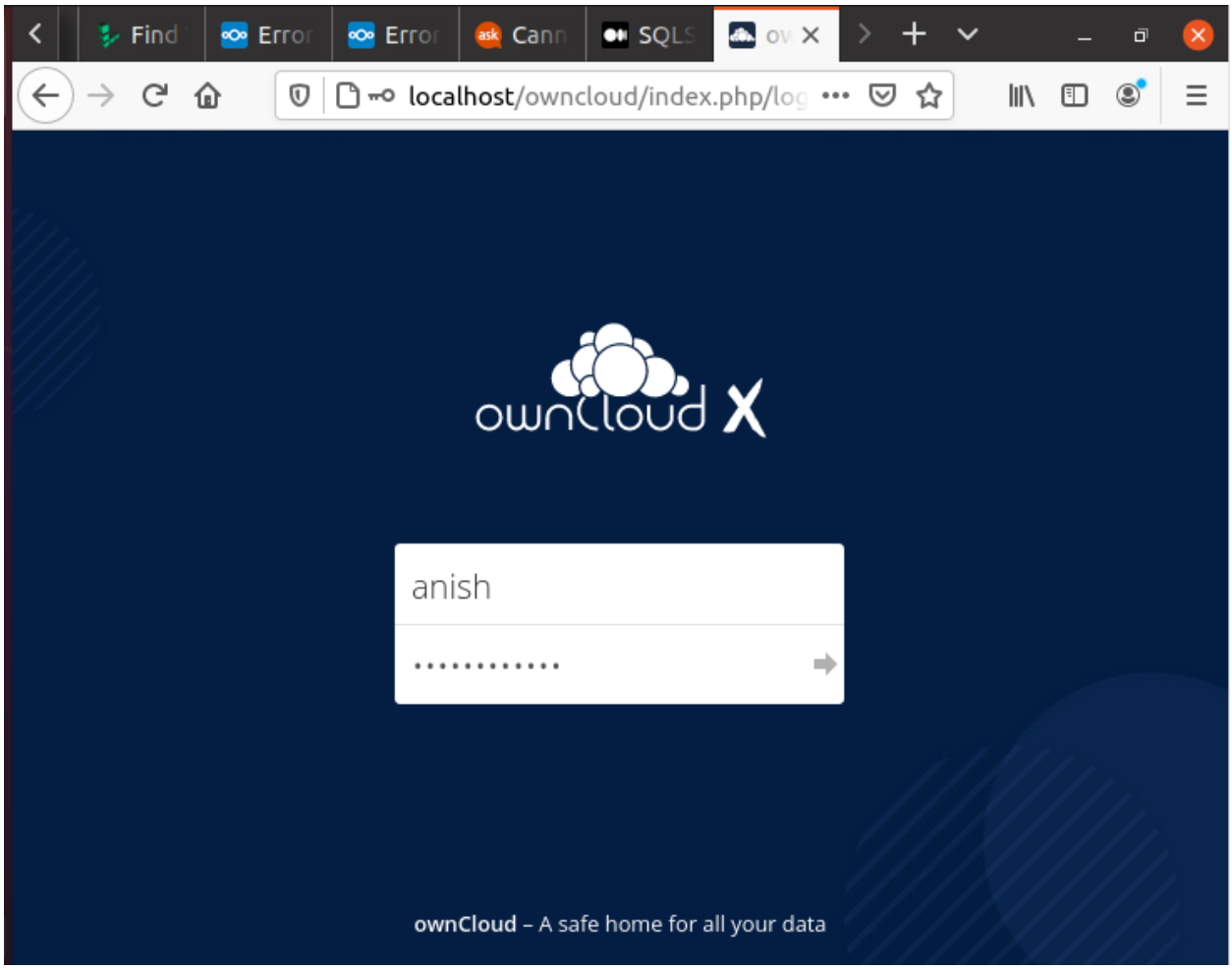



localhost/owncloud/index.php
Configure the database
Only MySQL/MariaDB is available. Install and activate additional PHP modules to choose other database types.
For more details check out the documentation. ↗
owncloduser
PASSWORD
owncloddb
localhost
Please specify the port number along with the host name (e.g., localhost: 5432).

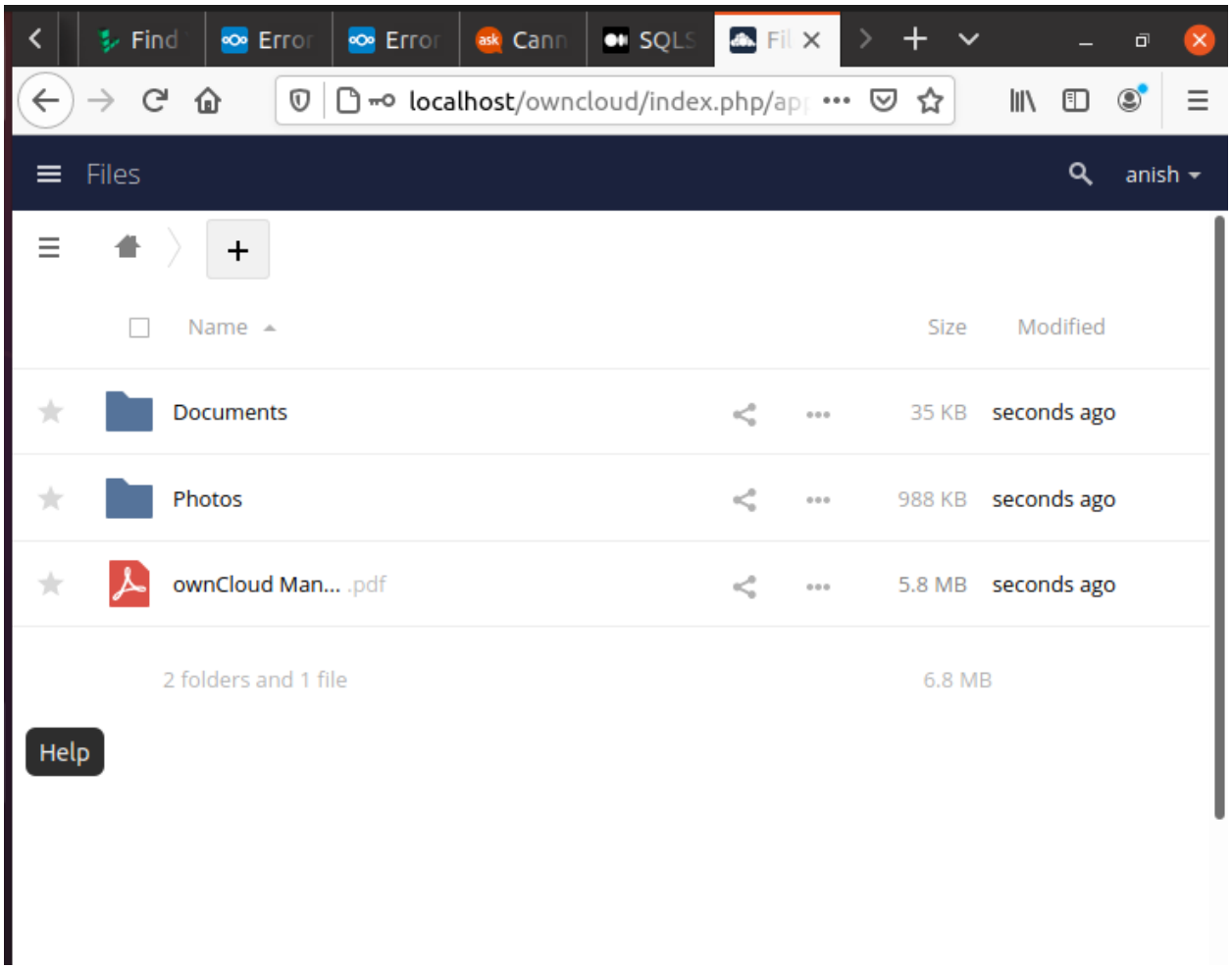
Failure creating admins user as cannot enter phpmyadmin as my root
Working on changes by providing grant all privileges using grant option

```
anish@anish-VirtualBox:~$ sudo mysql --user=root mysql
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 59
Server version: 8.0.23-0ubuntu0.20.04.1 (Ubuntu)

Copyright (c) 2000, 2021, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

mysql> grant all privileges on *.* to 'owncloud user1'@'localhost' with grant op
tion;
Query OK, 0 rows affected (0.02 sec)

mysql>
```

User created successfully now login

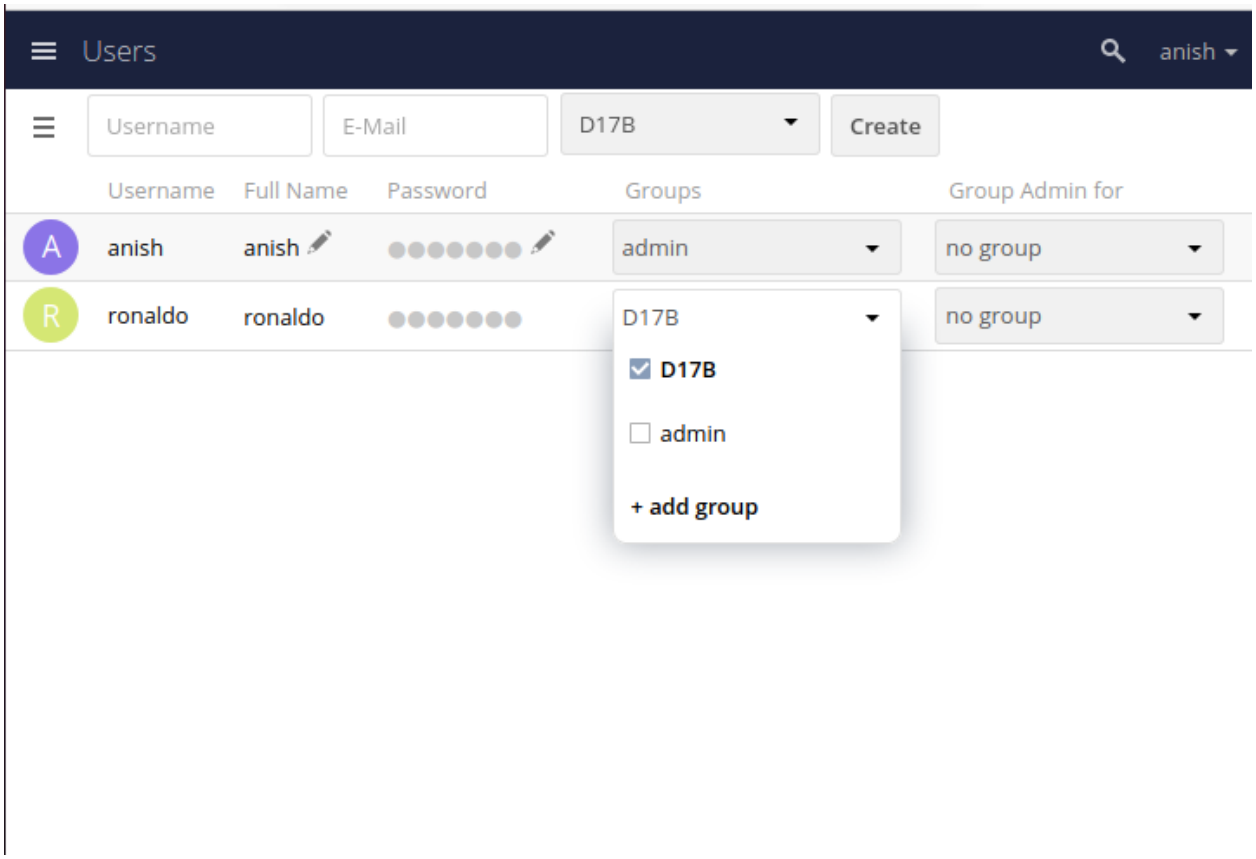


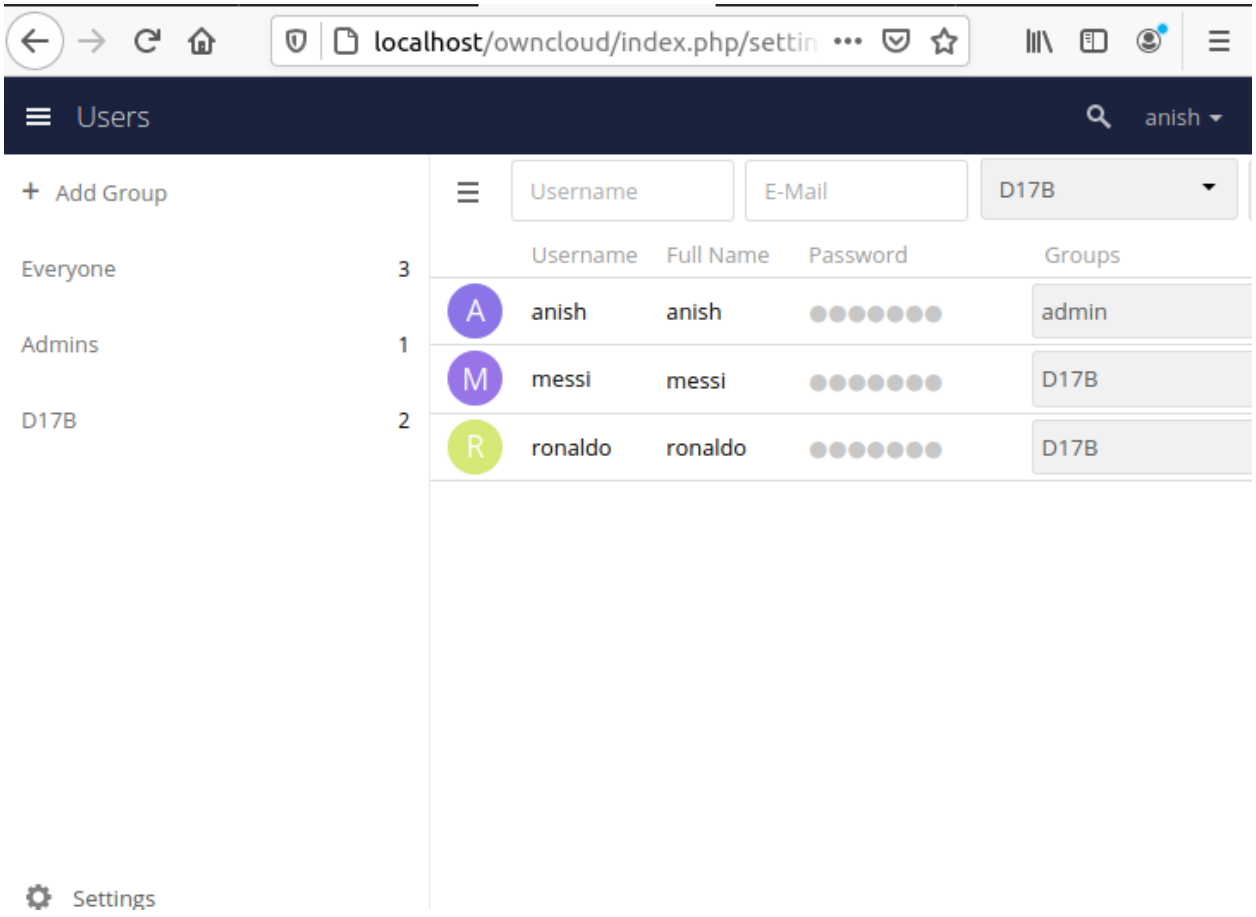
owncloud HOME PAGE



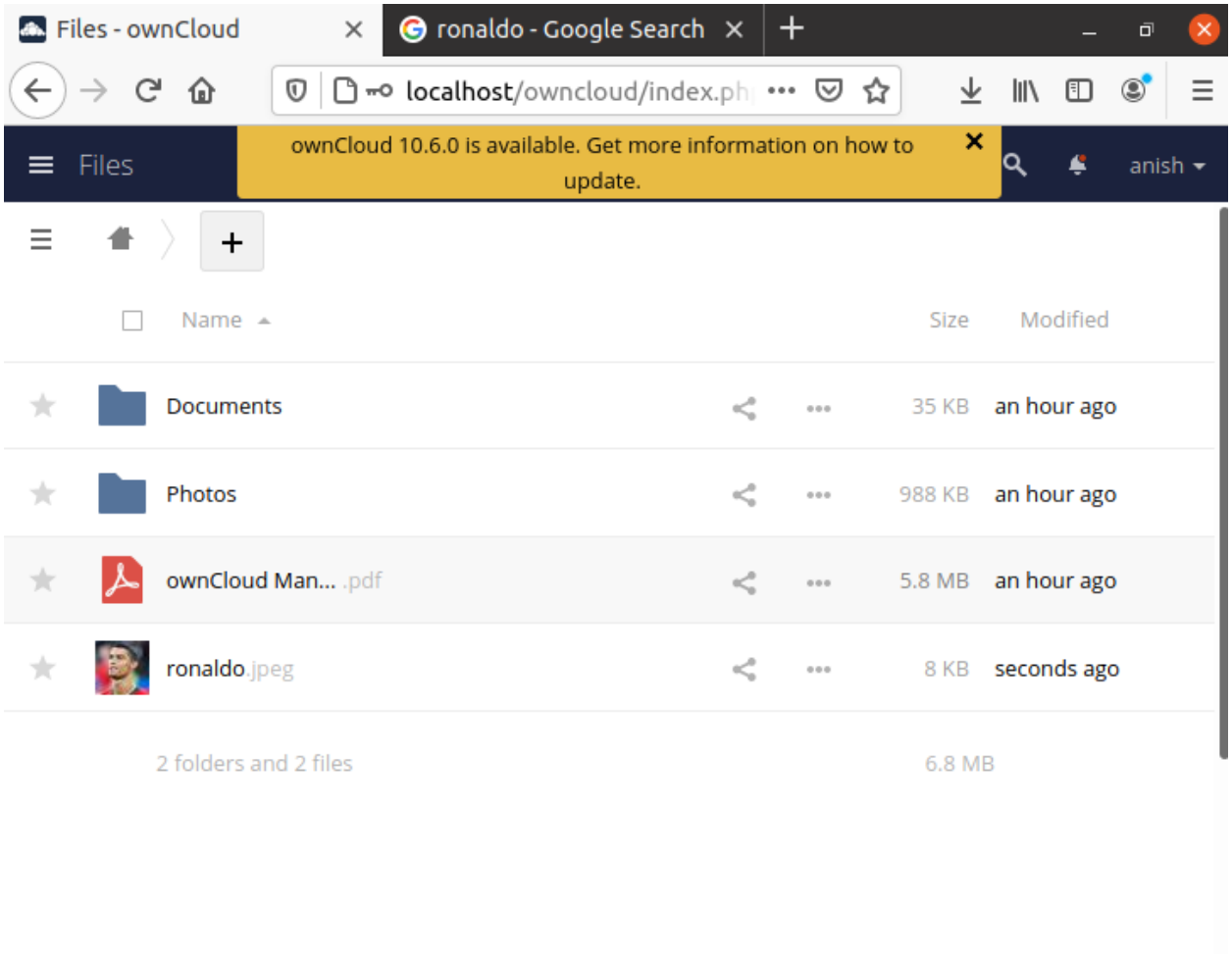
USER MANAGEMENT IN OWNCLOUD

Creating users and adding in various groups

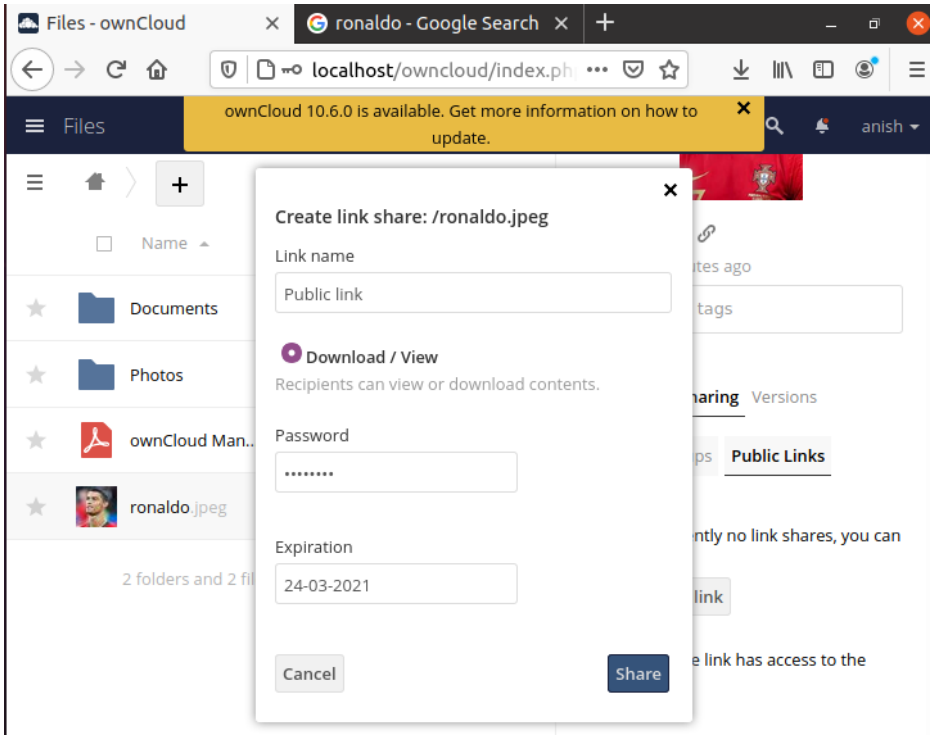



localhost/owncloud/index.php/settin
Users
anish
Add Group
Everyone 3
Admins 1
D17B 2
Settings
Username
E-Mail
D17B
Username
Full Name
Password
Groups
anish
anish
admin
messi
messi
D17B
ronaldo
ronaldo
D17B

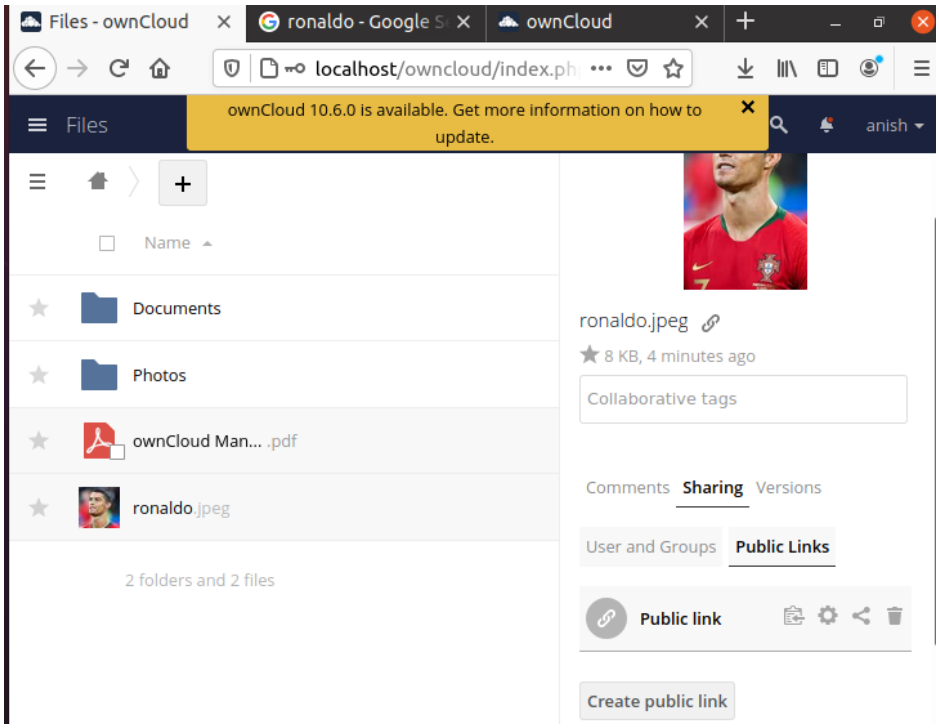
Uploading files



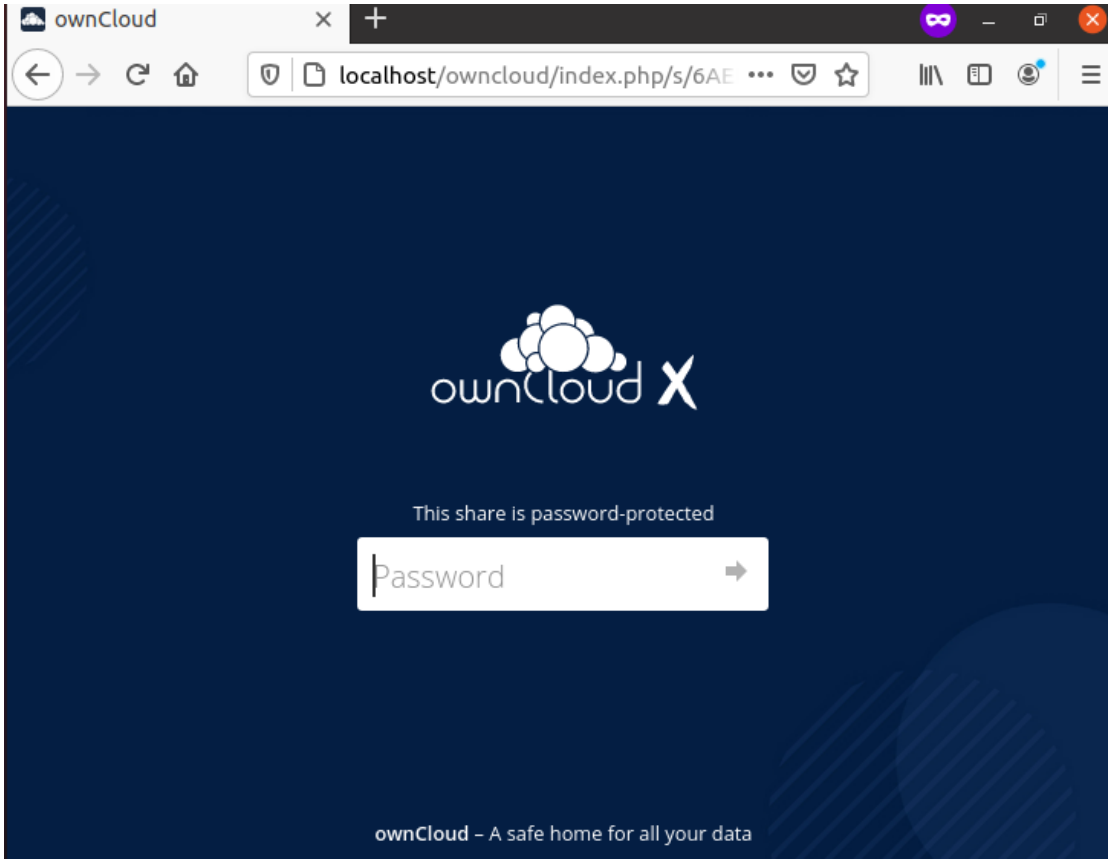
Creating public link to share files

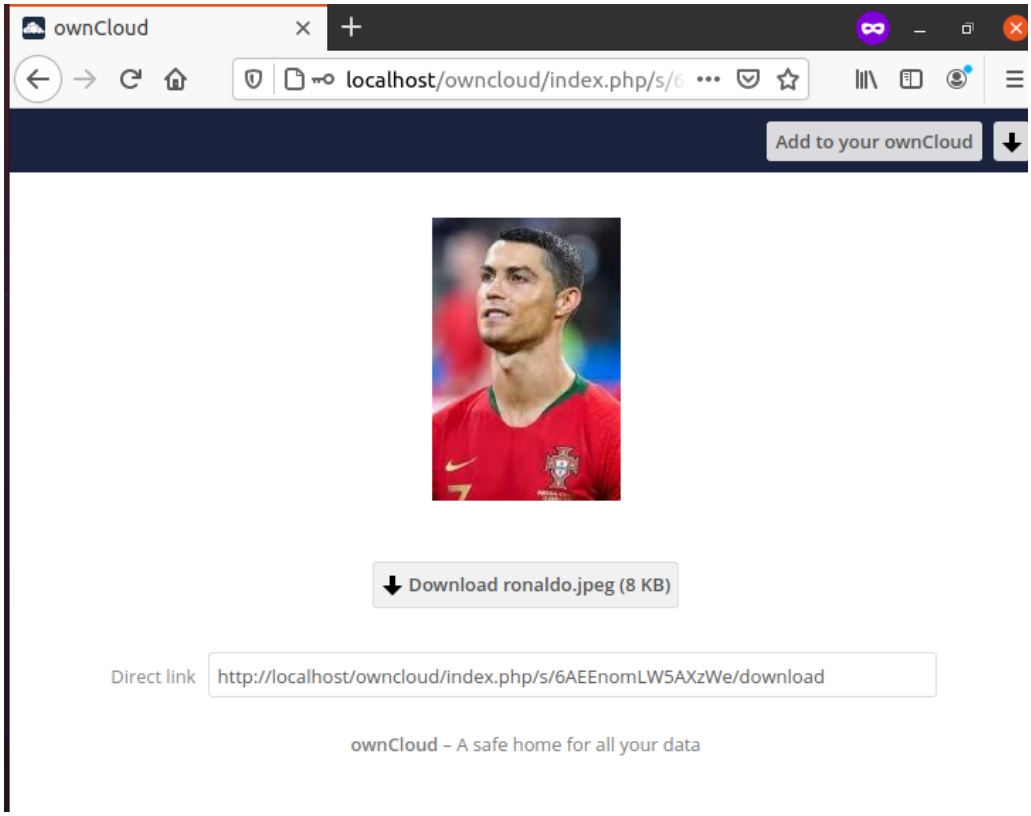


Public link obtained

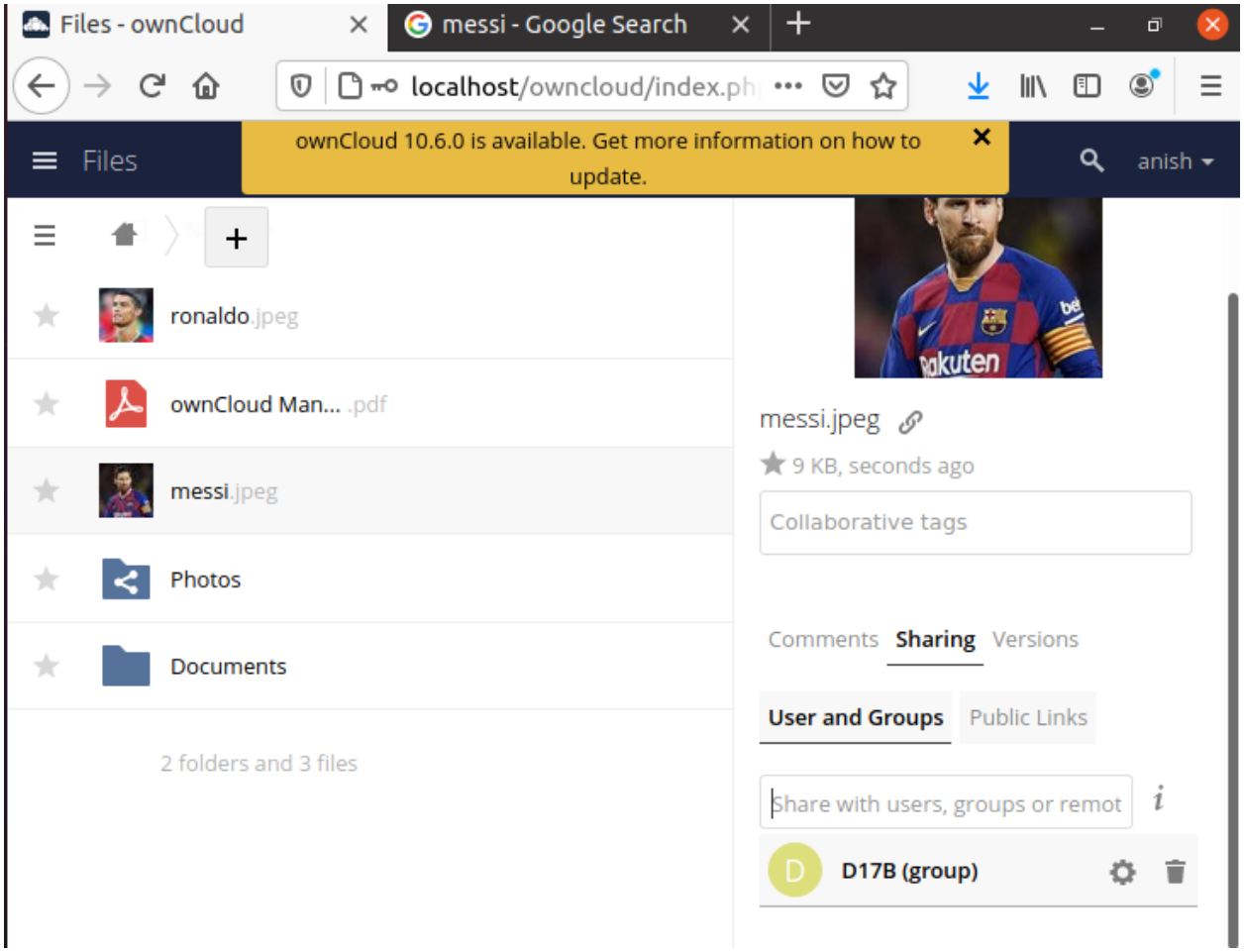


Opening public link



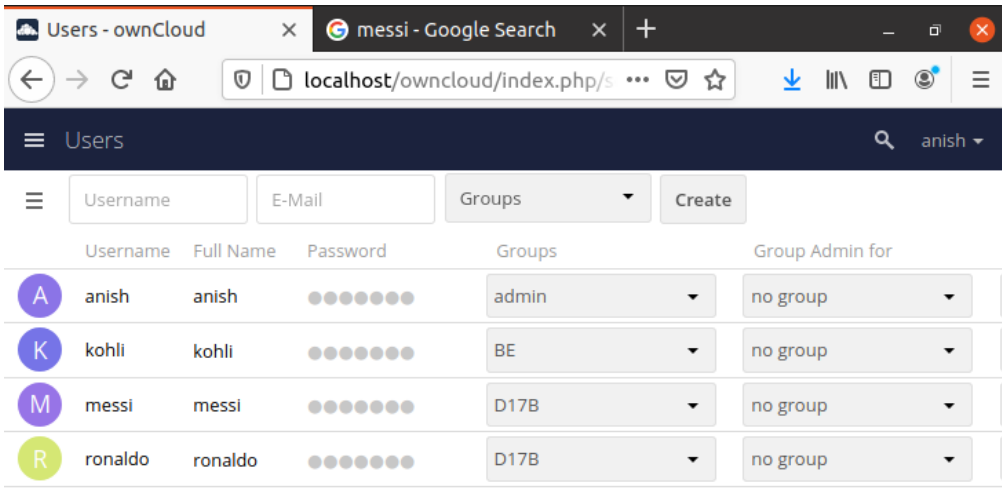

ownCloud
localhost/owncloud/index.php/s/6
Add to your ownCloud
Download ronaldo.jpeg (8 KB)
Direct link
http://localhost/owncloud/index.php/s/6AEEnomLW5AXzWe/download
ownCloud – A safe home for all your data

Sharing file to a particular group

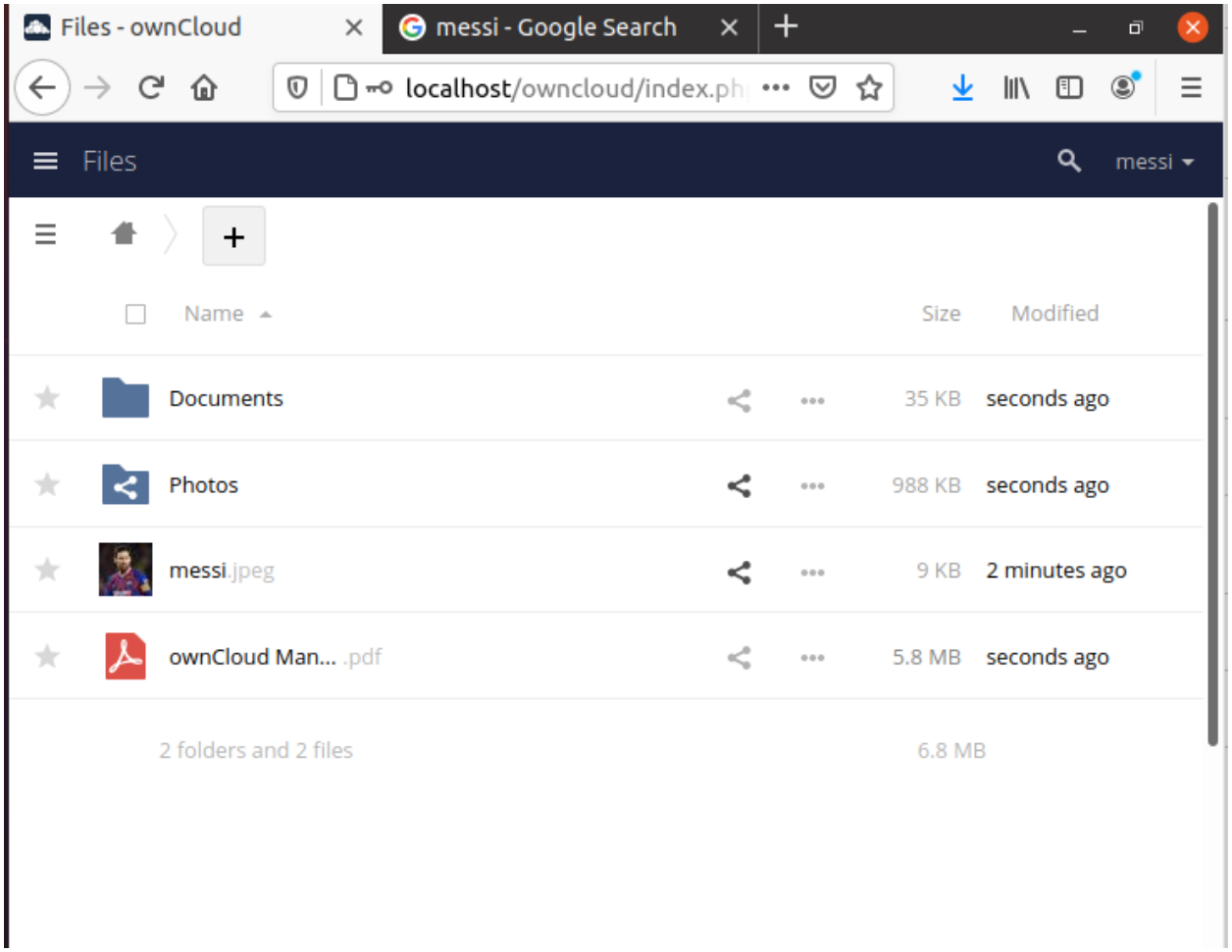


checking the rights

Step1 check current system users



step 2: Logged in as user “messi” in group “D17B”
Hence shared file is viewed



Step3: Logged in as user “kohli” not in group D17B
Hence shared file is not viewed