

Nextcloud Setup and Project Report

Ryan Fitzgerald, May 5th 2025

Prerequisites

In order to set up Nextcloud successfully, the following systems/apps need to be installed.

- **Docker/Docker Engine**
- **Docker compose**
- **Text editor (VIM, Nano, etc.)**
- **An internet browser (Firefox, Chrome, etc.)**

For this project, Docker is used to run the Nextcloud and MariaDB containers. It creates the environment that the application and its database will be running in. Docker Compose is used to define and manage these two docker instances using a docker-compose.yml file. A text editor is needed in order to configure the docker-compose.yml file. In order to access the Nextcloud interface, we will need to access it using an internet browser.

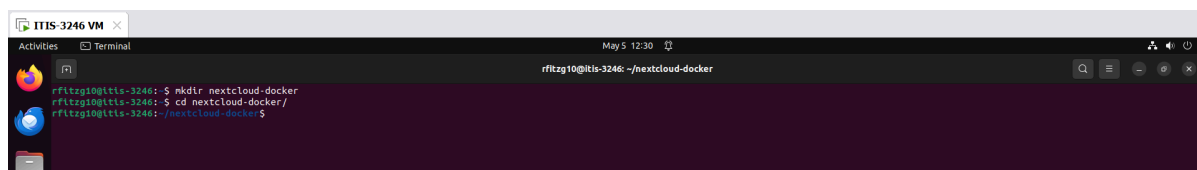
Project Overview

The goal of this project as outlined in the project proposal is to set up and configure a Nextcloud instance using Docker locally. I'll be setting up Nextcloud to be connected to a MariaDB database and setting up the database via a configured docker-compose file. Once the setup in Docker is complete, the final setup of Nextcloud will take place through the web interface, which we will be accessing through Firefox in this case. I'll be doing this project on a Virtual Machine, but that is not necessary for any of the steps.

Step 1: Creating New Directory

While not completely necessary, in order to keep everything in one place that is easy to access, we will be creating a new directory that will store the docker-compose file. To do this, we will simply run the mkdir command, and give the new directory an appropriate name. We will then change to the new directory.

```
mkdir <new directory>
cd <new directory>
```



Step 2: Configuring docker-compose.yml File

In order to get Nextcloud up and running, we'll need to create and configure a docker-compose.yml file that will set up the two containers we will be utilizing, which is Nextcloud with a MariaDB database backend. While in the new directory, run the command to start editing a new file with whichever text editor you are using.

```
vim docker-compose.yml
nano docker-compose.yml
```

Now that we are in the text editor, we can start configuring it for what we need. In this case I already have made the configured file, and you can copy and paste it into the text editor.

```
version: '3.8'

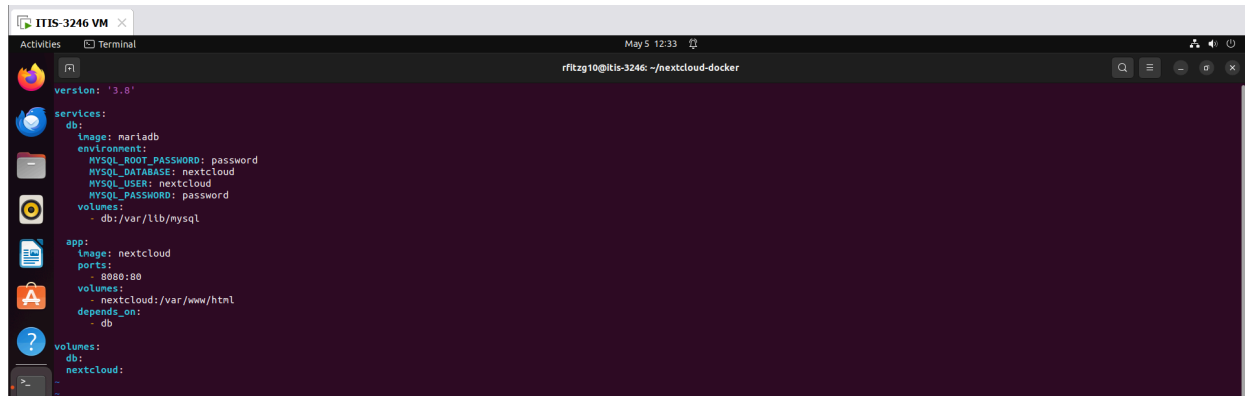
services:
  db:
    image: mariadb
    environment:
      MYSQL_ROOT_PASSWORD: password
      MYSQL_DATABASE: nextcloud
      MYSQL_USER: nextcloud
      MYSQL_PASSWORD: password
    volumes:
      - db:/var/lib/mysql

  app:
    image: nextcloud
    ports:
      - 8080:80
    volumes:
      - nextcloud:/var/www/html
    depends_on:
      - db

volumes:
  db:
  nextcloud:
```

To break down the contents of the file, the first line specifies which version of the Compose file format to use. The services section defines the containers that Docker Compose will be managing for our instance of Nextcloud to function. It creates a container from the official MariaDB image, which is the database we are using. The environment section has the variables needed to configure the database. It sets the root password, creates a new database named nextcloud, creates a new user, and gives that user a password. You can rename these as needed, but for

this project I'll be keeping it simple. The volumes line creates a new volume so the database is saved even if the container is stopped or deleted. The app section creates a new container from the official Nextcloud image. It then maps the 8080 port on the host machine to 80 inside the container, which allows us to access it via a browser. As with the services section, the volumes line creates a new volume so the data for the Nextcloud image is saved should anything happen to the container. The depends_on section ensures that the database is up and running before the Nextcloud app starts. The last volumes section gives the two made volumes the names db and nextcloud.



Step 3: Starting the Containers

Now that we have the compose file configured, we can now start the containers by running this command.

```
sudo docker-compose up -d
```

This command will download the needed images for MariaDB and Nextcloud, create the two containers for them, and start them based on our configurations in the compose file.

```
ITIS-3246 VM
Activities Terminal
May 5 12:38
rflitz10@itis-3246: ~/nextcloud-docker

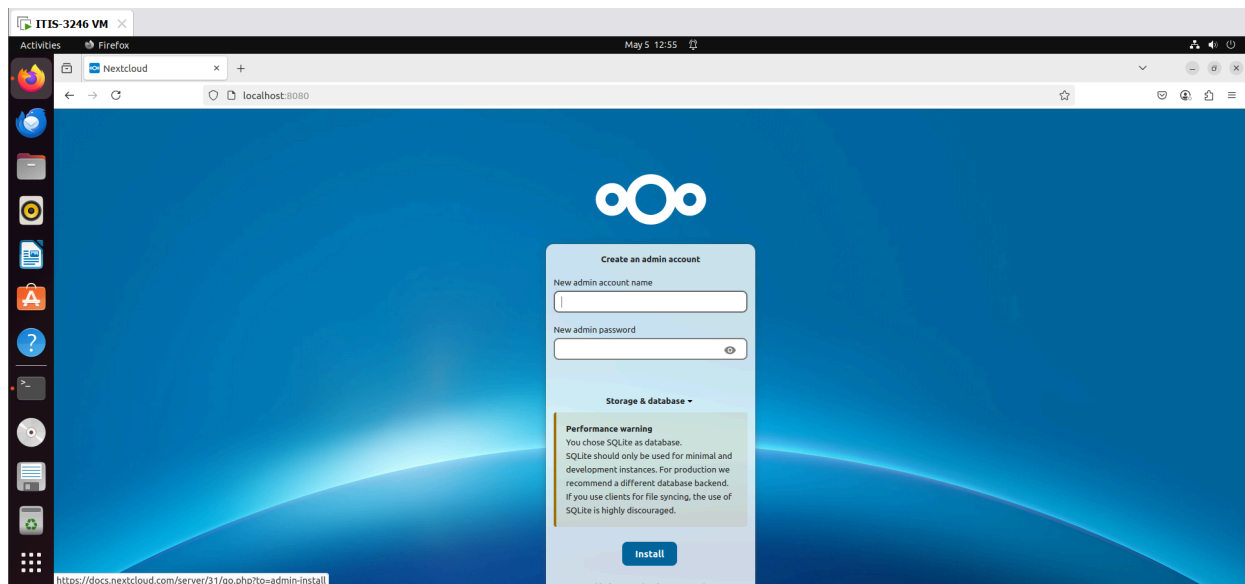
creating volume "nextcloud-docker_db" with default driver
Creating volume "nextcloud-docker_nextcloud" with default driver
Pulling db (marladb):...
latest: Pulling from library/marladb
2726e237d1a3: Pull complete
0b06a86c0a5a: Pull complete
2b221cf763a8: Pull complete
5e4180757702: Pull complete
4302809f5f8e: Pull complete
bbe77eafa75b: Pull complete
ab732728101f: Pull complete
8c9f57c1bb30: Pull complete
Digest: sha256:s1e893022978acbf8ad43710b7a979774ed90787fa32d199162148ce28fe3b76
Status: Downloaded newer image for marladb:latest
Pulling app (nextcloud):...
latest: Pulling from library/nextcloud
254e72407760: Pull complete
7342773645e1: Pull complete
0742248fe35d: Pull complete
d09d9032f8a4: Pull complete
4e604cc377fa: Pull complete
f8f5025d207a: Pull complete
fab811d58563: Pull complete
a983732eb0dd: Pull complete
b386c40fe703: Pull complete
d43e09495ca3: Pull complete
05e8022c65f7: Pull complete
e10769b0c97f: Pull complete
7f9de49fb7a5: Pull complete
4f4fb706ef54: Pull complete
608f12dde5d5: Pull complete
476460dfc7cc: Pull complete
f8dd094e9138: Pull complete
86549476a21b: Pull complete
5365e78cfc07: Pull complete
b95cdef5b10e: Pull complete
4ab33fcd9a74: Pull complete
75bf396b1125: Pull complete
Digest: sha256:s44da0574b0dc75c185128b091e6ac613feabda7ce7f75c9730d9f706e37d0
Status: Downloaded newer image for nextcloud:latest
Creating nextcloud-docker_db_1 ... done
Creating nextcloud-docker_app_1 ... done
rflitz10@itis-3246: ~/nextcloud-docker $
```

Step 4: Getting to Nextcloud Web Interface

Once the containers have been successfully created, we can now open up our browser of choice. In the address bar, enter the localhost address if you are using the same machine we set the containers up on, or use the IP address of the machine running Docker.

localhost:8080

http://<ip_address>:8080/



Step 5: Final Setup and Installation

You should now see the initial Nextcloud setup page in the browser. Enter in a new admin account name and a password for it, then click on the 'Storage & database' option. The data folder by default should be `/var/www/html/data`, which is what we will leave it as. Then, click on 'MySQL/MariaDB' and fill in the options as follows:

Database account: `nextcloud`

Database password: `password`

Database name: `nextcloud`

Database host: `db`

Once you've entered everything correctly, click on 'Install' and the installation will start. It may take a minute for the first setup. Once it is done, you will get a list of recommended apps. You can choose these if you'd like, but for this project I'll be skipping them. After that, if you see the 'Recommended files' section on your screen, your Nextcloud instance is all set up and ready to go! You can navigate to the 'Files' page at the top left. From there, you upload and download files, organize folders, and use Nextcloud's features.

