Webserver

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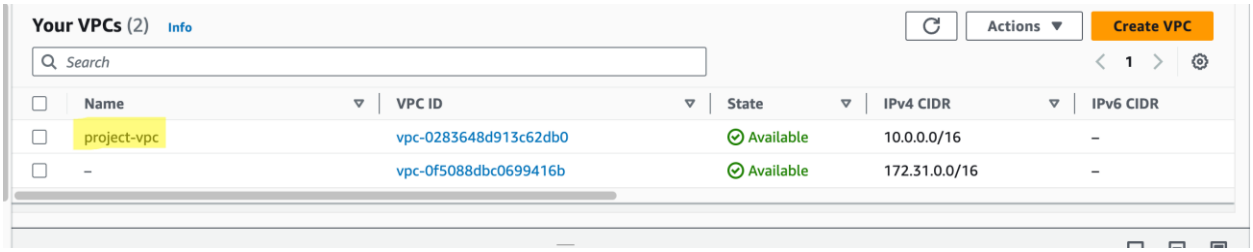
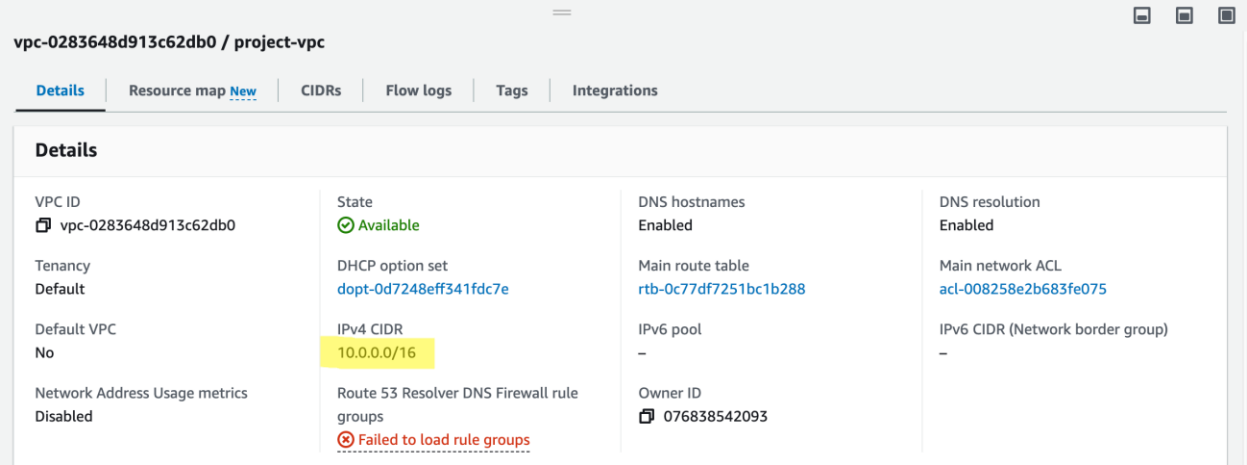
VPC Creation

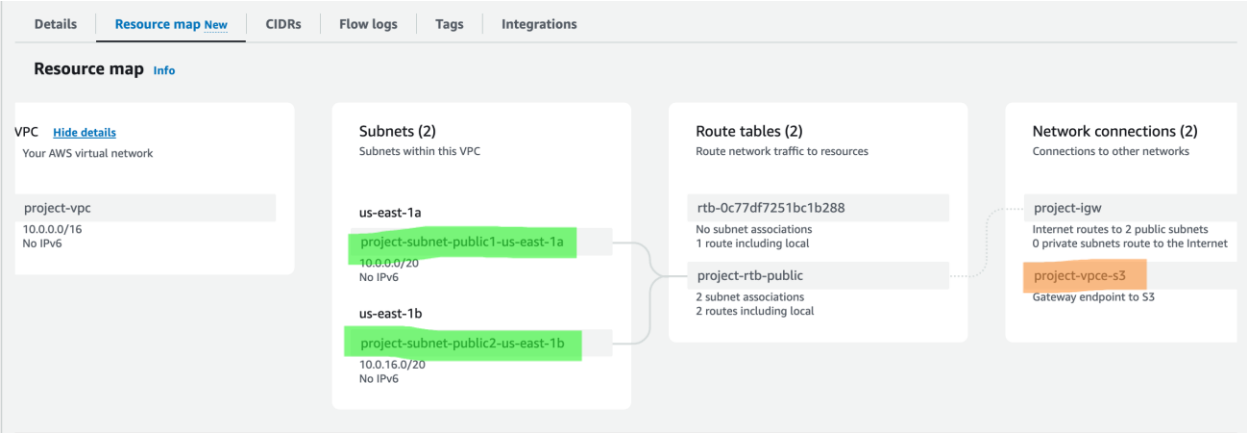
New VPC is created by name = project ~~t vpc~~

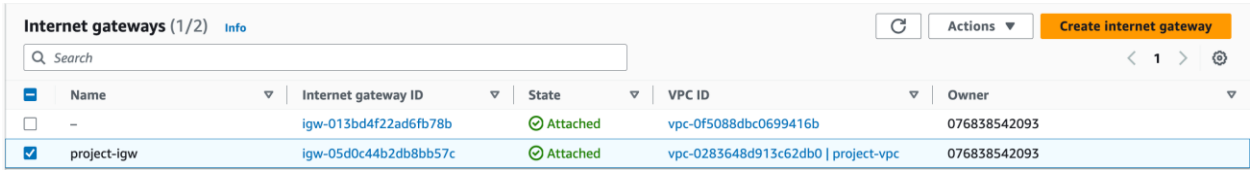


The IPv4 range for this VPC is 10.0.0.0/16



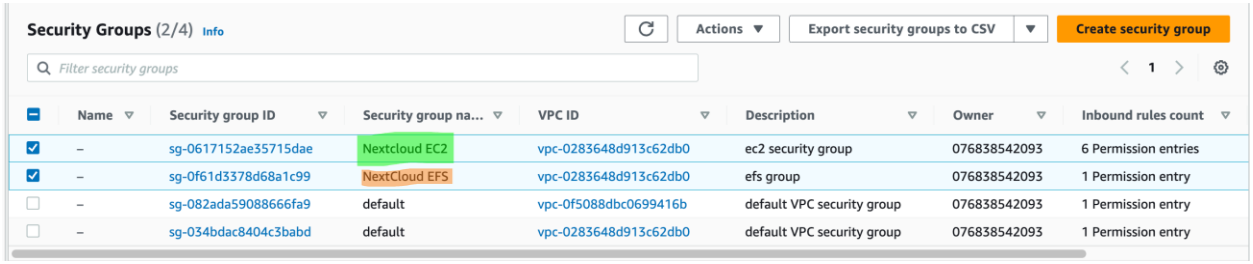
Two Subnets and One S3 Gateway is associated with this VPC Resource Map.



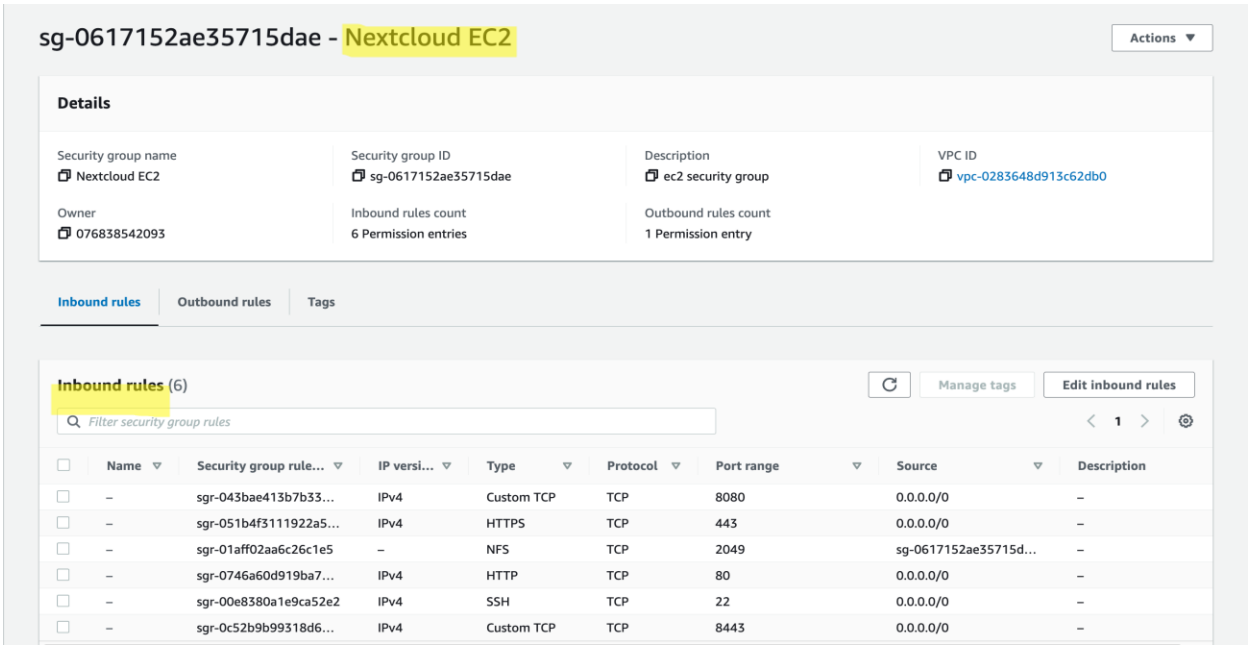


NextCloud Security Group Creation

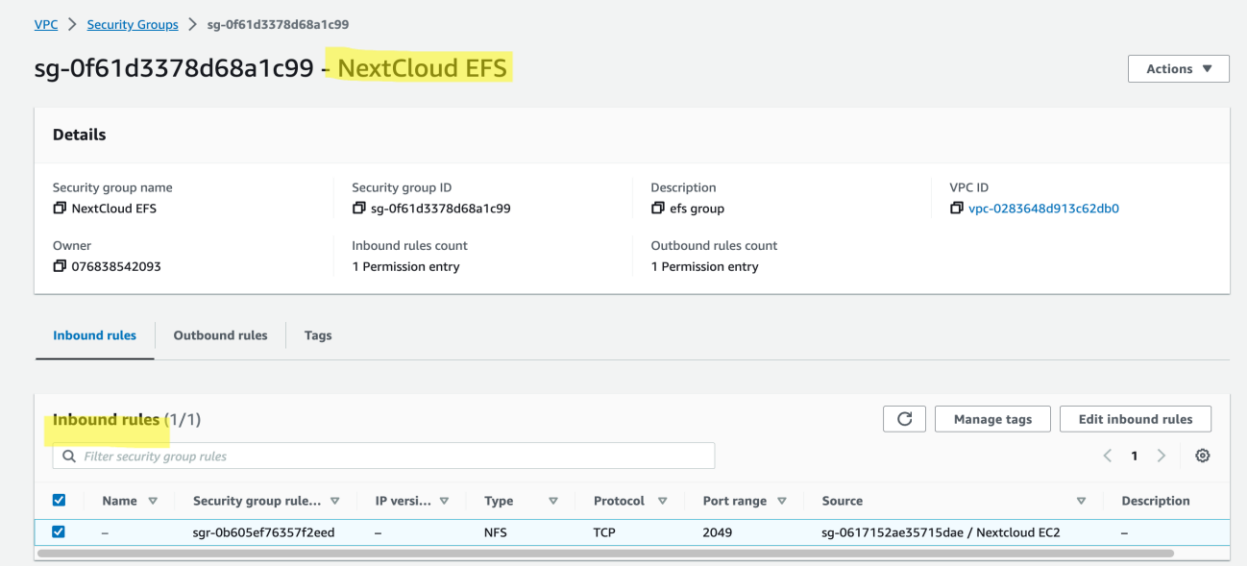
There are two security groups created for EC2 and EFS



Inbound rules for EC2 as per requirement



Inbound rules for EFS as per requirement

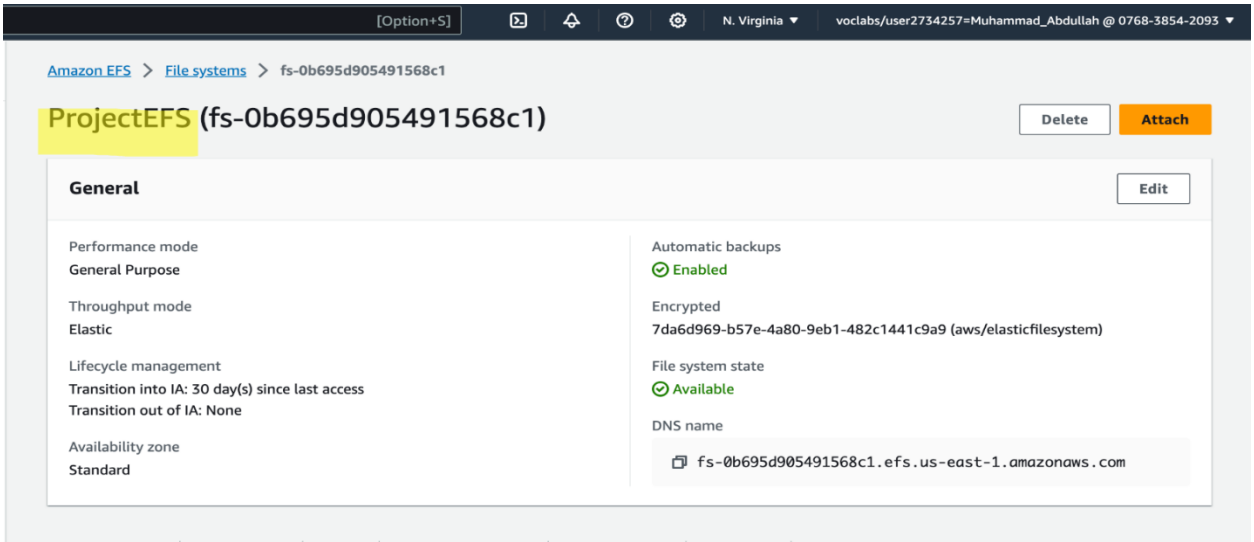


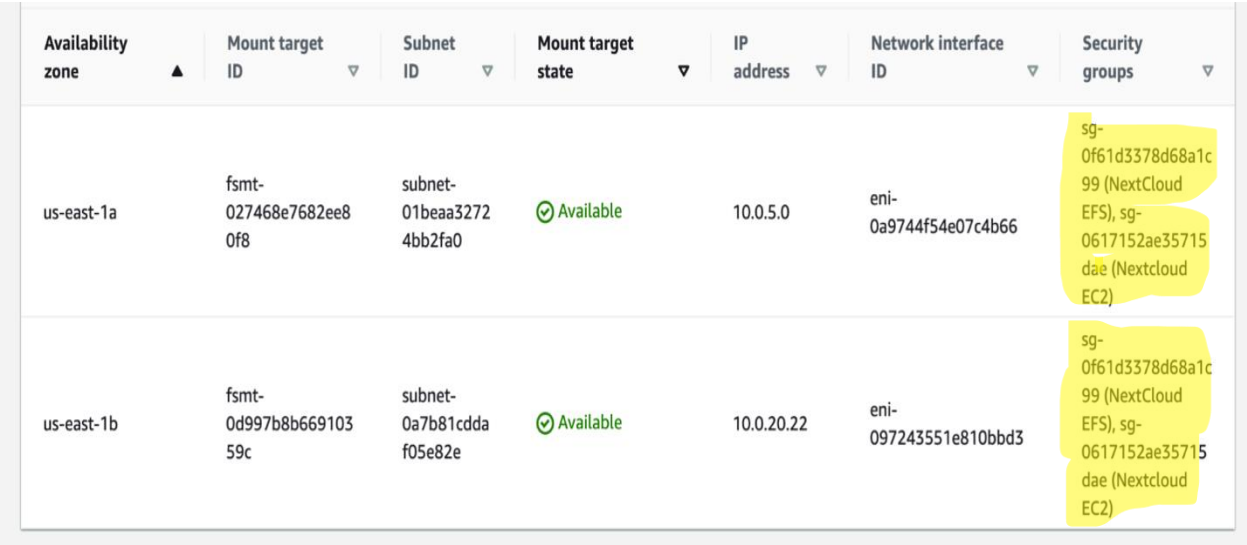
EFS Storage and S3 bucket creation

Creating EFS Storage and S3 Bucket for NextCloud
Introduction: This document provides step-by-step instructions for setting up Amazon Elastic File System (EFS) storage and an S3 bucket for use with NextCloud.

Step 1: Create EFS Storage

1. In the AWS (Amazon Web Services) Management Console, navigate to "Elastic File System."
2. Click "Create file system."
3. Choose the previously created VPC from the dropdown.
4. Use the existing security group for access.
5. Complete the EFS setup.

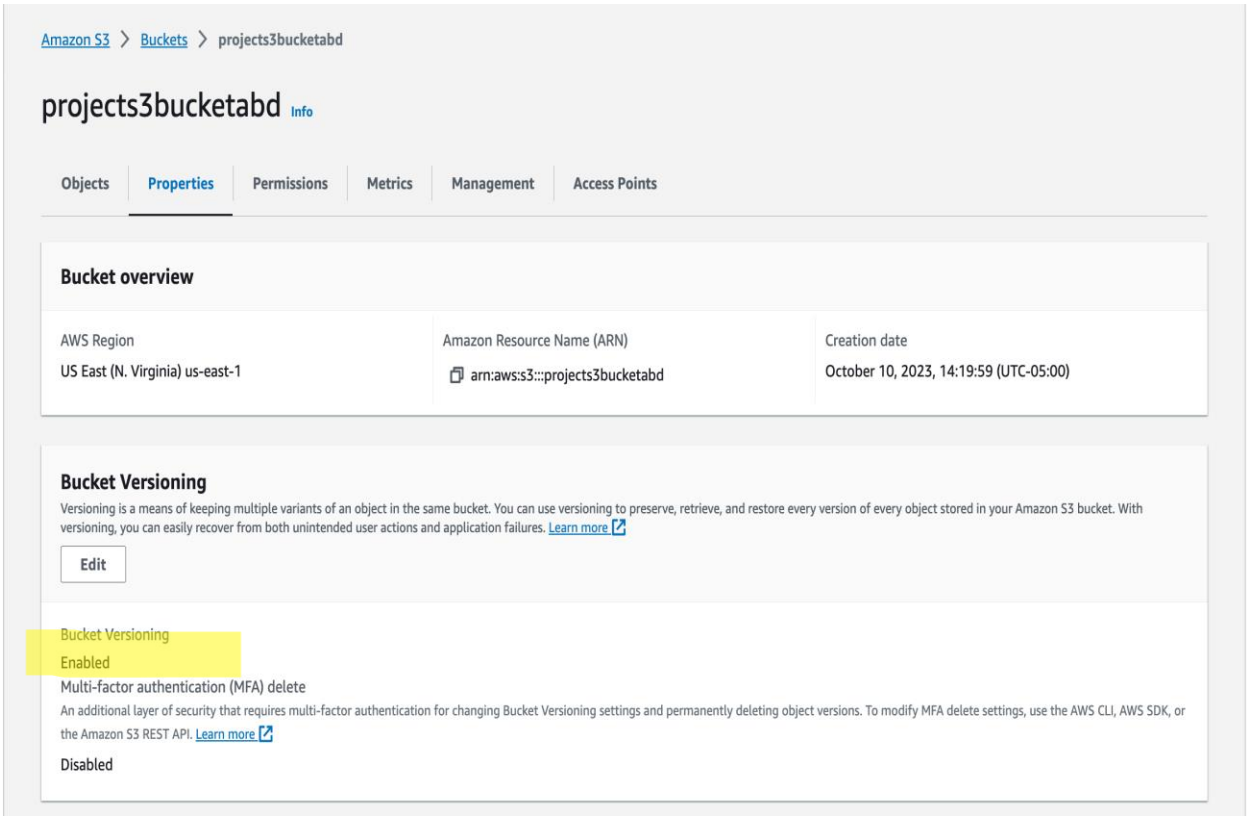


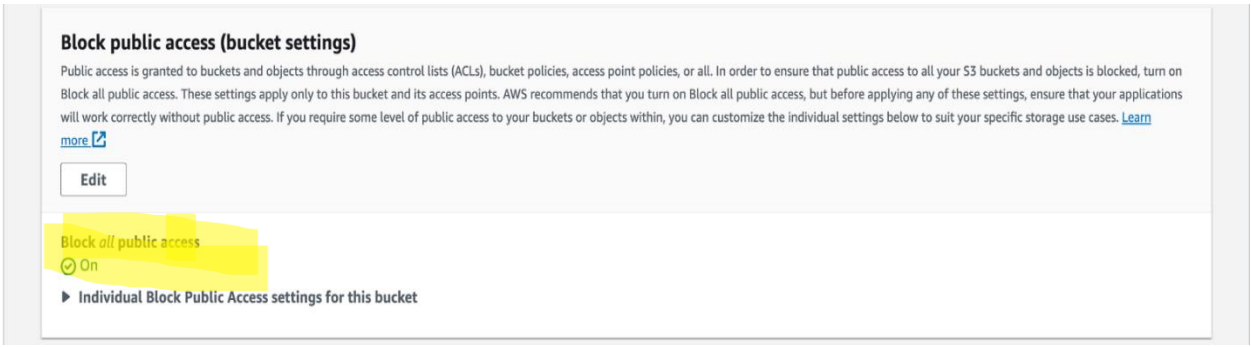


Availability zone	Mount target ID	Subnet ID	Mount target state	IP address	Network interface ID	Security groups
us-east-1a	fsmt-027468e7682ee80f8	subnet-01beaa32724bb2fa0	Available	10.0.5.0	eni-0a9744f54e07c4b66	sg-0f61d3378d68a1c99 (NextCloud EFS), sg-0617152ae35715dae (Nextcloud EC2)
us-east-1b	fsmt-0d997b8b66910359c	subnet-0a7b81cddaf05e82e	Available	10.0.20.22	eni-097243551e810bbd3	sg-0f61d3378d68a1c99 (NextCloud EFS), sg-0617152ae35715dae (Nextcloud EC2)

Step 2: Create an S3 Bucket

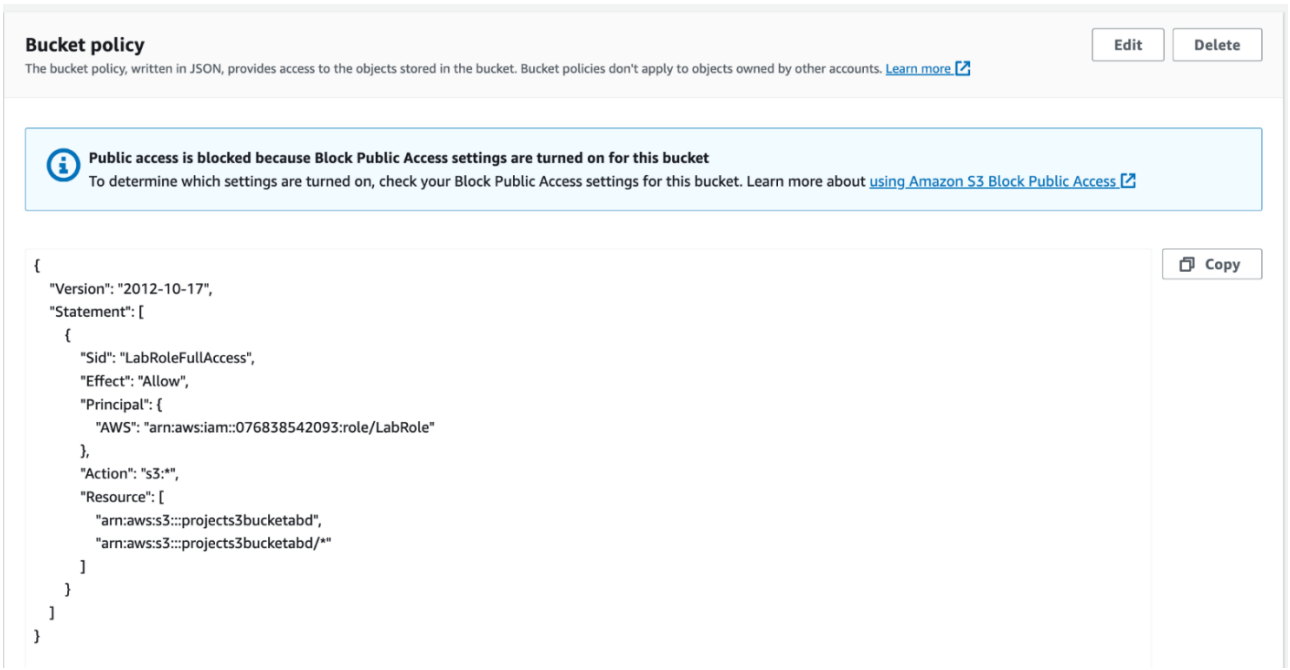
1. Navigate to "S3" in the AWS Management Console.
2. Click "Create bucket."
3. Choose the same AWS region as your Nextcloud EC2 instance.
4. Enable bucket versioning.
5. Leave all other settings at their defaults.
6. Click "Create bucket."
7. Confirm that the bucket is NOT public.





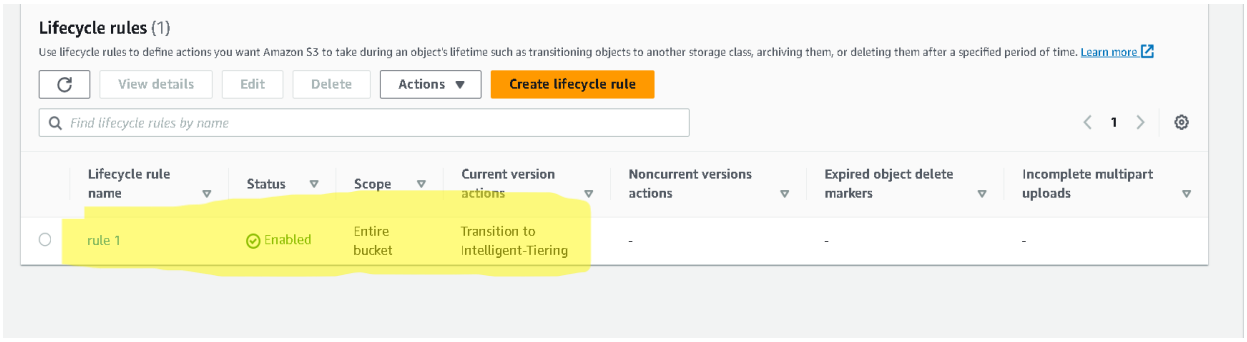
Step 3: S3 Policy Generation

1. In the S3 bucket's properties, navigate to the "Permissions" tab.
2. Click on "Bucket Policy" and use the Policy Generator.
3. Create a policy to allow "LabRole" full access to the bucket.



Step 4: S3 Lifecycle Rule Configuration

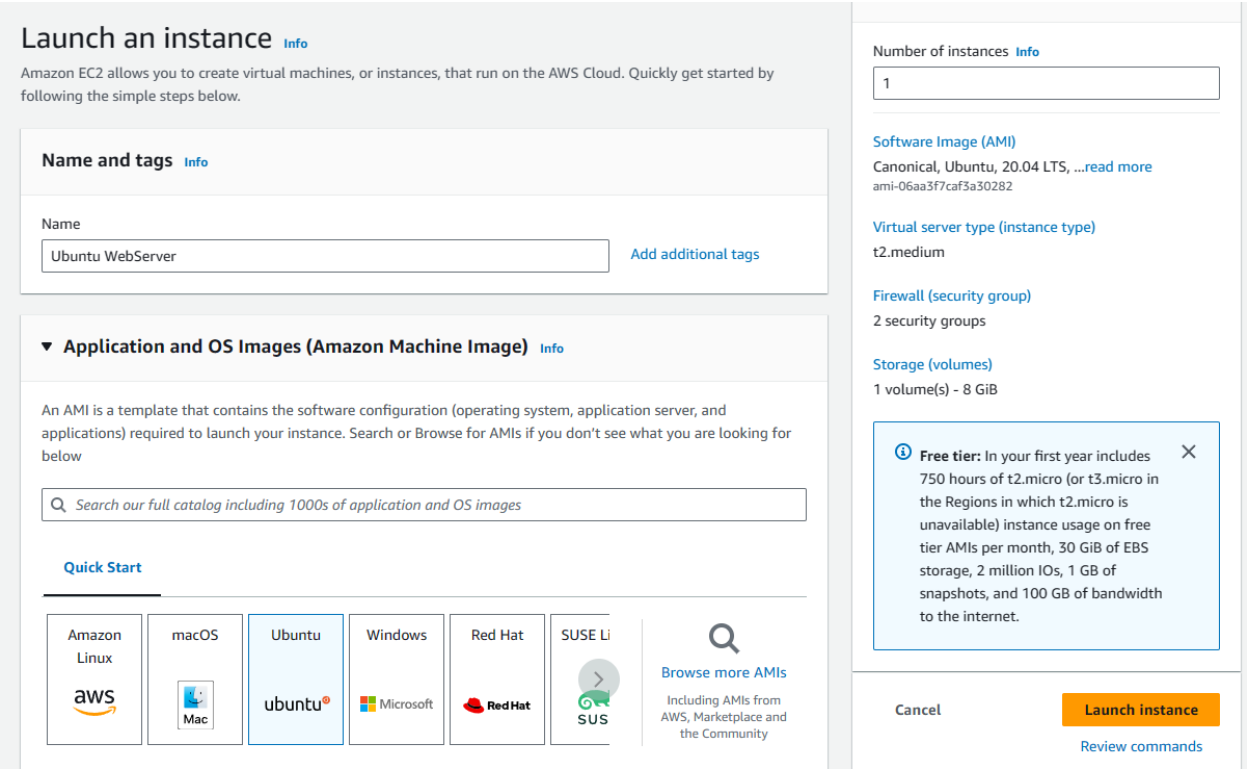
1. In the S3 bucket's properties, navigate to the "Management" tab.
2. Click on "Lifecycle."
3. Create a lifecycle rule that moves ALL files to the intelligent-tiering storage class after 0 days.



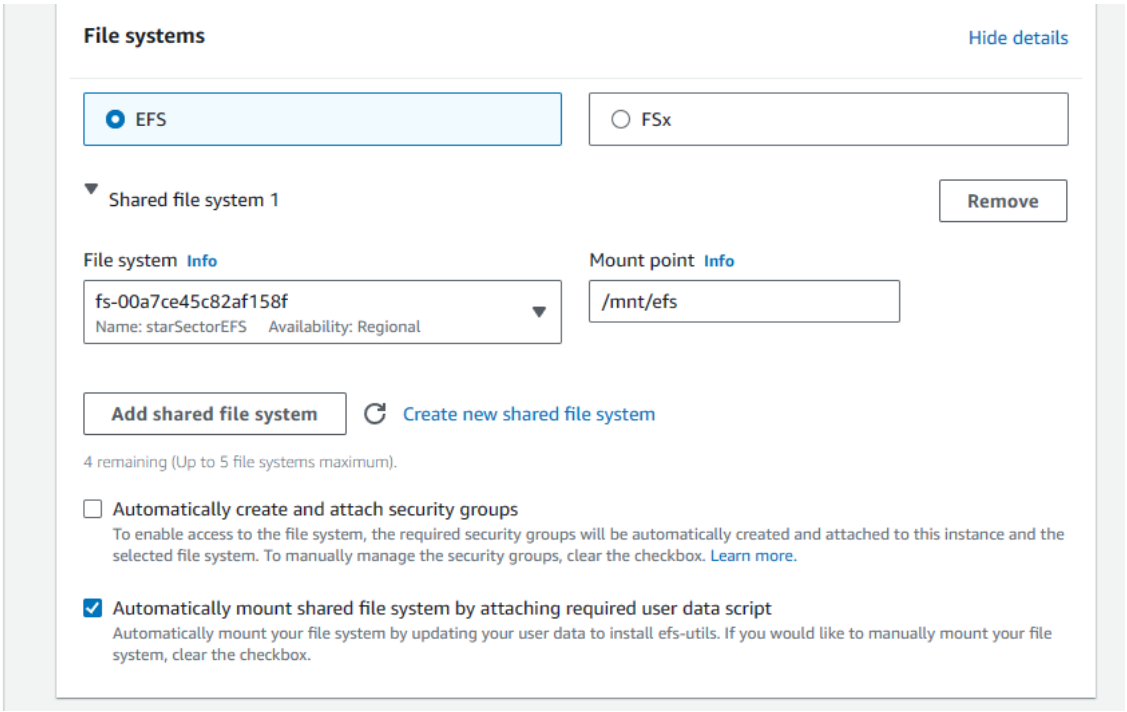
Creation of EC2

Create an EC2 instance with the following specifications:

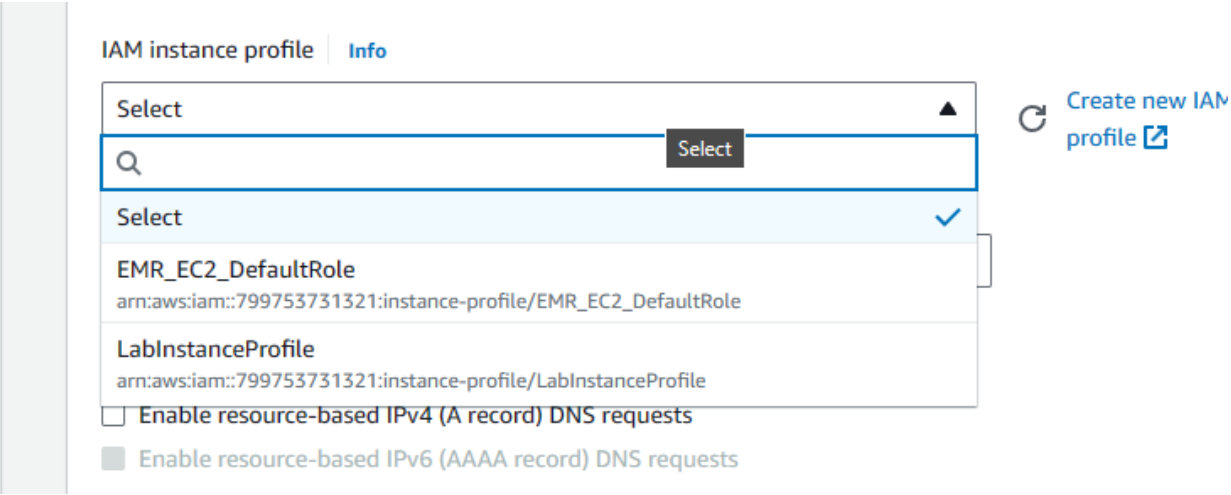
- Ubuntu server 22.04LTS;
- t2.medium;
- Use previously made VPC and Security group
- 8GB EBS storage



- Mount the previously created EFS volume into /mnt/efs
  - Enable: automatically mount the file system.
  - Disable: automatically create and attach security groups

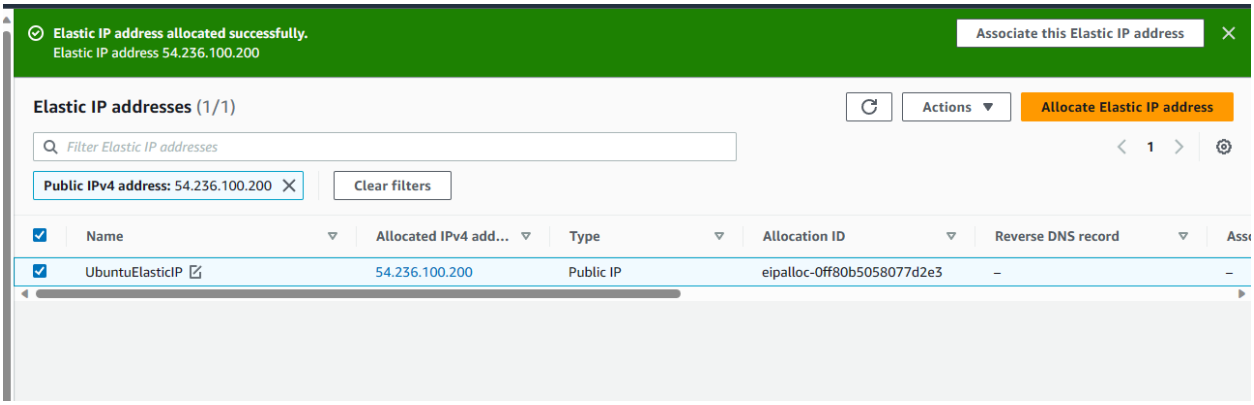


- Add the LabInstance role so the instance can connect to S3 and other services



Creation of elastic IP__

Elastic IP created and associated



Create a Duck DNS domain

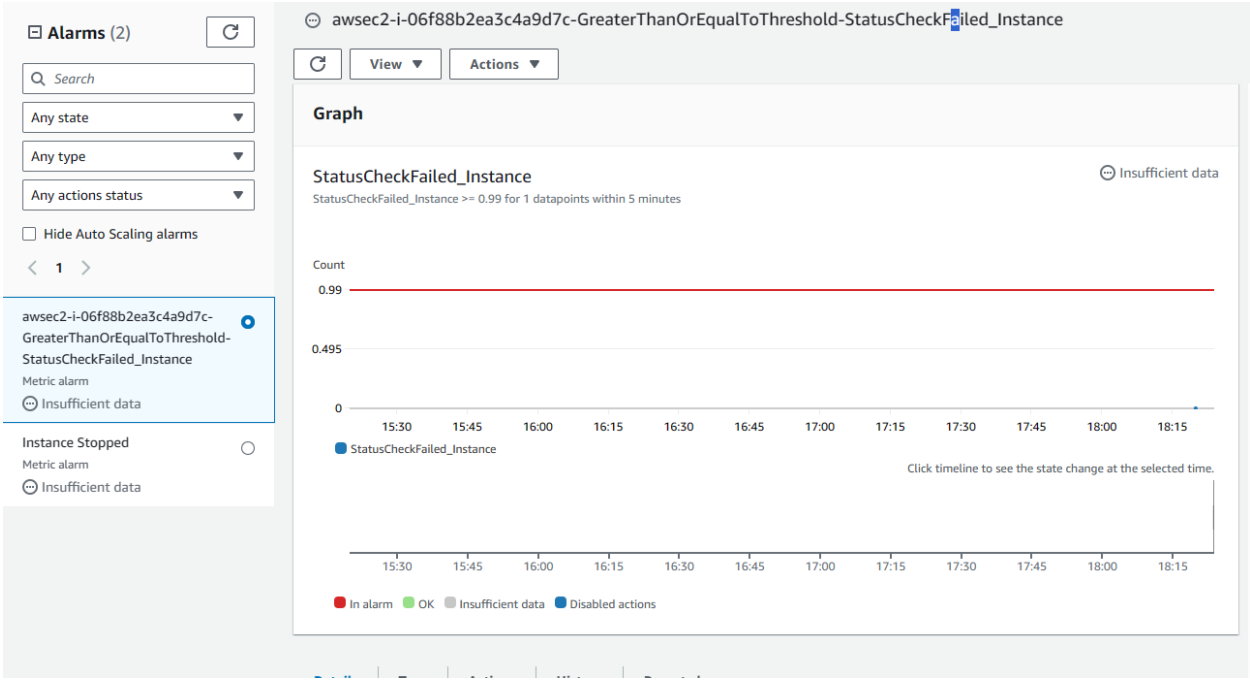
Go to https://www.duckdns.org/

Elastic IP to point 54.236.100.200

Domain: https://starsector.duckdns.org

Configure CloudWatch Monitoring

Create a new CloudWatch task monitoring NextCloud ec2 instance; Done by creating an alarm to check if the instance fails status checks



Install NextCloud

Login via ssh with the following command:

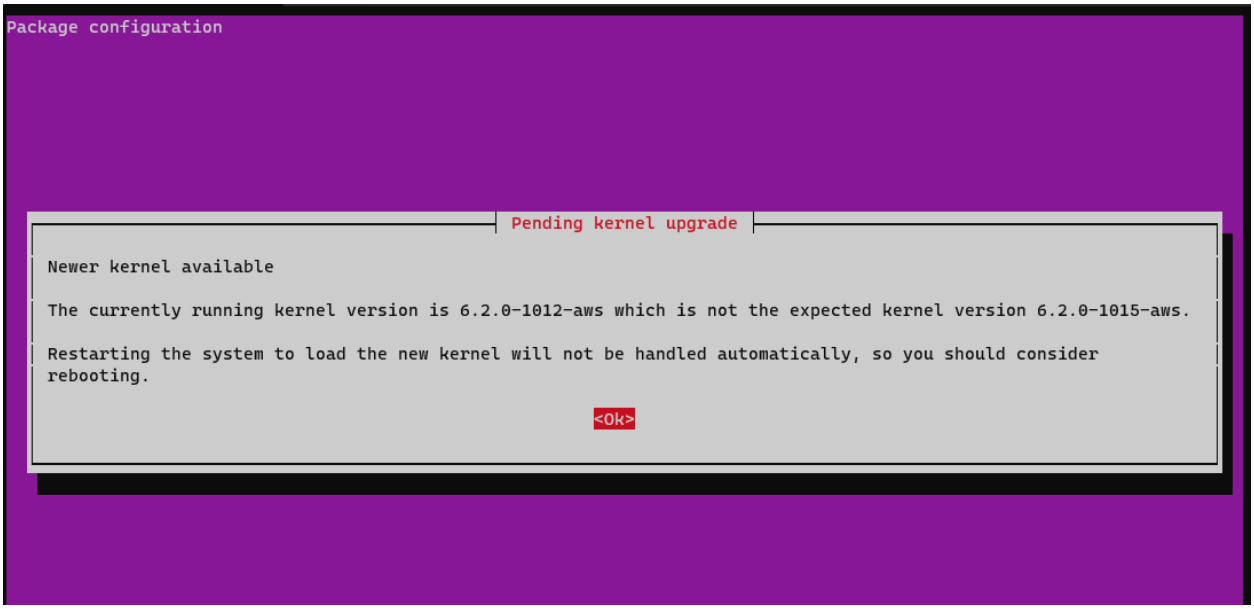
ssh -i "C:\Users\adeko\OneDrive - Red River College Polytech\Cloud Infrastructure\phoenix.pem" ubuntu@54.236.100.200

```
@ 54.236.100.200
ssh: connect to host  port 22: Connection refused
PS C:\Users\adeko> ssh -i "C:\Users\adeko\OneDrive - Red River College Polytech\Cloud Infrastructure\phoenix.pem" ubuntu
@54.236.100.200
The authenticity of host '54.236.100.200 (54.236.100.200)' can't be established.
ED25519 key fingerprint is SHA256:s6sZ11/5gCIH13yAa43Fj/263xh/rCOPM1sqC8xoZXU.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '54.236.100.200' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1012-aws x86_64)

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

  System information as of Wed Nov 15 18:27:36 UTC 2023

  System load:  0.080078125       Processes:             112
  Usage of /:   20.7% of 7.57GB   Users logged in:       0
  Memory usage: 6%                IPv4 address for eth0: 10.0.27.241
  Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
```

\

Perform updates using the following code:

- *sudo apt update*
- *sudo apt dist-upgrade*



Install docker.io from repositories using the command: *sudo apt install docker.io*

Create a folder called docker folder In your EFS mount and other necessary folders:

- */mnt/efs/docker*
- */mnt/efs/docker/nextcloud_aio_apache*

- */mnt/efs/docker/nextcloud_aio_collabora_fonts*
- */mnt/efs/docker/nextcloud_aio_database*
- */mnt/efs/docker/nextcloud_aio_database_dump*
- */mnt/efs/docker/nextcloud_aio_mastercontainer*
- */mnt/efs/docker/nextcloud_aio_nextcloud*
- */mnt/efs/docker/nextcloud_aio_nextcloud_data*
- */mnt/efs/docker/nextcloud_aio_redis*
- */mnt/efs/backup*

Manually ADD docker volumes for each of the folders created

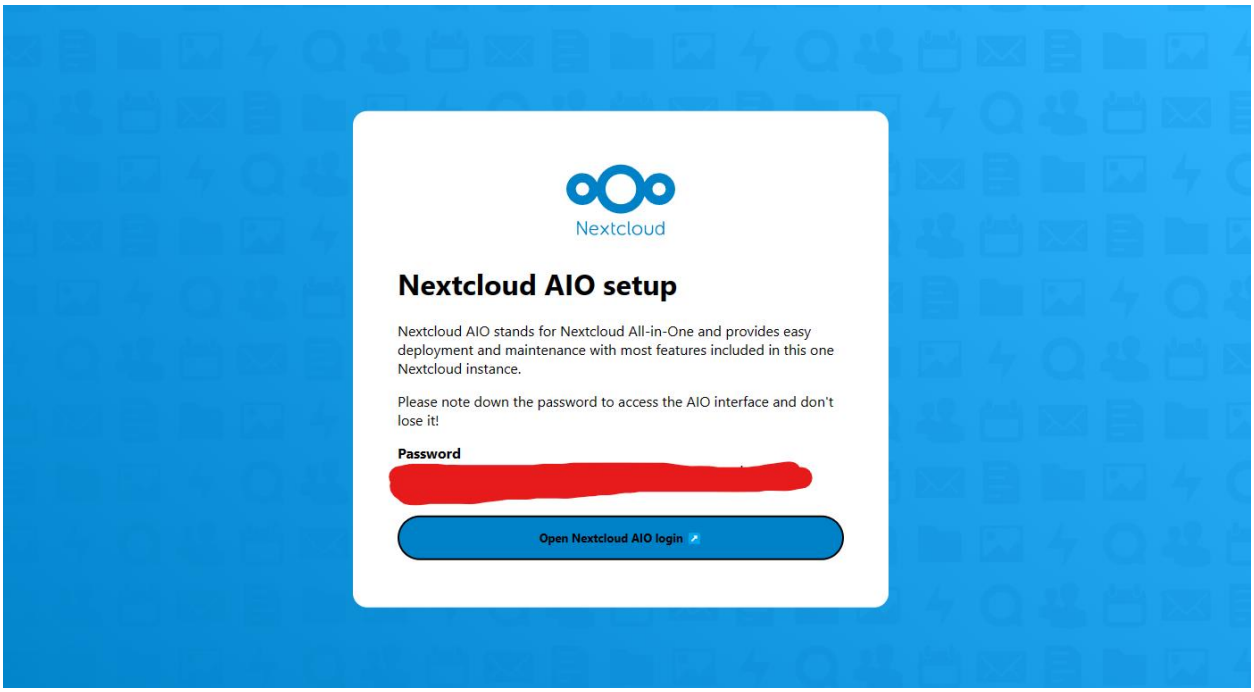
- *sudo docker volume create --driver local --name nextcloud_aio_apache -o device=/mnt/efs/docker/nextcloud_aio_apache -o type=none -o o=bind*
- *sudo docker volume create --driver local --name nextcloud_aio_collabora_fonts -o device=/mnt/efs/docker/nextcloud_aio_collabora_fonts -o type=none -o o=bind*
- *sudo docker volume create --driver local --name nextcloud_aio_database -o device=/mnt/efs/docker/nextcloud_aio_database -o type=none -o o=bind*
- *sudo docker volume create --driver local --name nextcloud_aio_database_dump -o device=/mnt/efs/docker/nextcloud_aio_database_dump -o type=none -o o=bind*
- *sudo docker volume create --driver local --name nextcloud_aio_mastercontainer -o device=/mnt/efs/docker/nextcloud_aio_mastercontainer -o type=none -o o=bind*
- *sudo docker volume create --driver local --name nextcloud_aio_nextcloud -o device=/mnt/efs/docker/nextcloud_aio_nextcloud -o type=none -o o=bind*
- *sudo docker volume create --driver local --name nextcloud_aio_nextcloud_data -o device=/mnt/efs/docker/nextcloud_aio_nextcloud_data -o type=none -o o=bind*
- *sudo docker volume create --driver local --name nextcloud_aio_redis -o device=/mnt/efs/docker/nextcloud_aio_redis -o type=none -o o=bind*
- *sudo docker volume create --driver local --name backup -o device=/mnt/efs/backup -o type=none -o o=bind*

Run the command to install NextCloud

```
        # For Linux and without a web server or reverse proxy (like Apache, Nginx, Cloudflare Tunnel and
else) already in place:
sudo docker run \
--init \
--sig-proxy=false \
--name nextcloud-aio-mastercontainer \
--restart always \
--publish 80:80 \
--publish 8080:8080 \
--publish 8443:8443 \
--volume nextcloud_aio_mastercontainer:/mnt/docker-aio-config \
--volume /var/run/docker.sock:/var/run/docker.sock:ro \
nextcloud/all-in-one:latest
```

You should be able to open browser and put in https://elasticIP:8080

Allows you to set up nextcloud.



Note the password

Configure Nextcloud

Make sure collabora is checked and others are unchecked

Set your backup location as /mnt/efs/backup NOTE: This should have been created previously

Change the time zone: America/Winnipeg

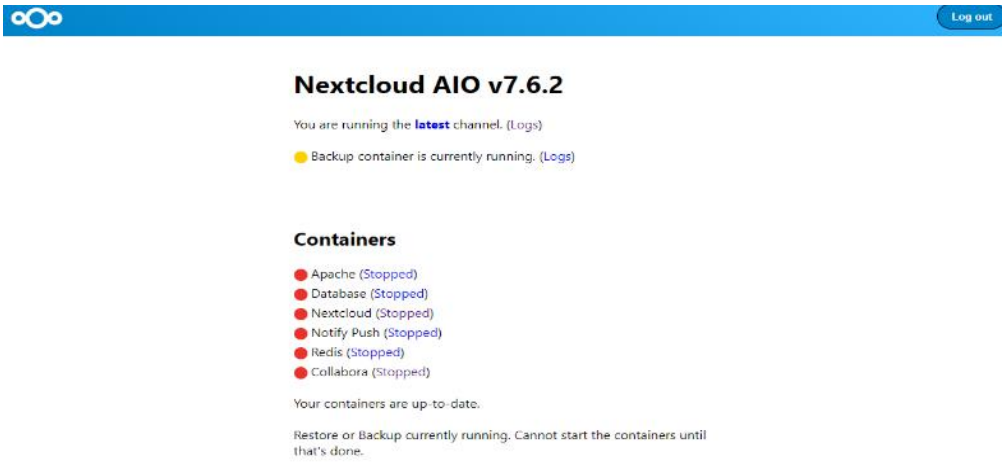
Wait until all the containers are GREEN Note: Might take a while

Note the Admin username and password, NOTE: do not lose this

Backup Setup

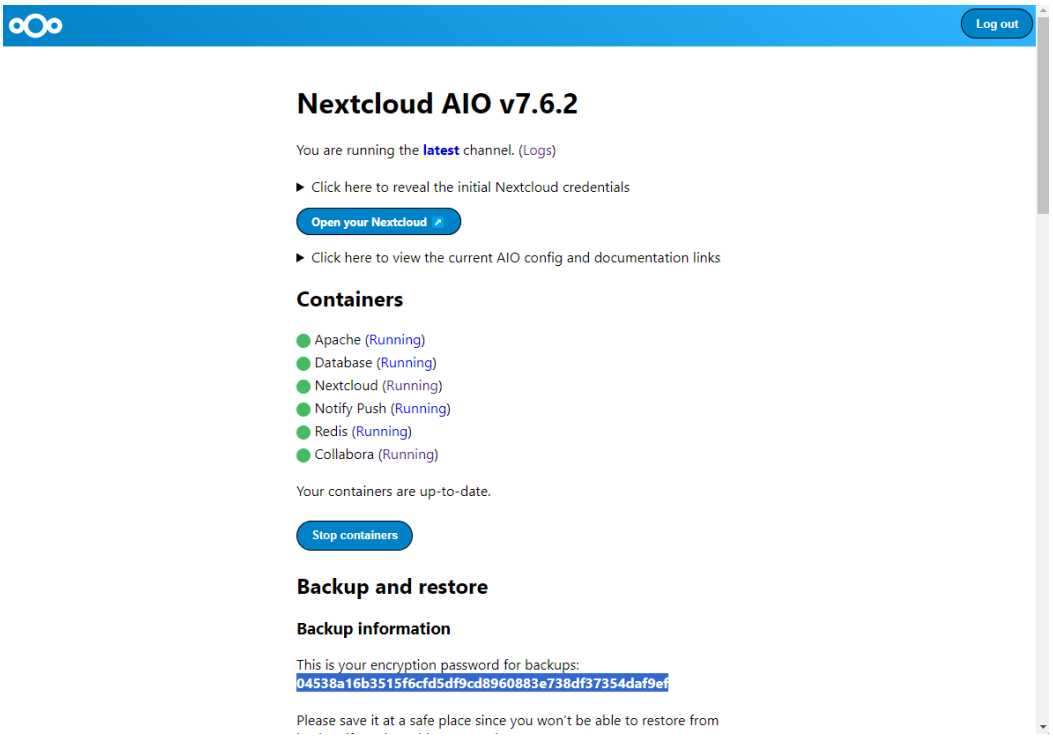
Enter your backup path "***/mnt/efs/backup***" and create a backup; NOTE: this would stop containers do not be alarmed.

Note the backup encryption key;

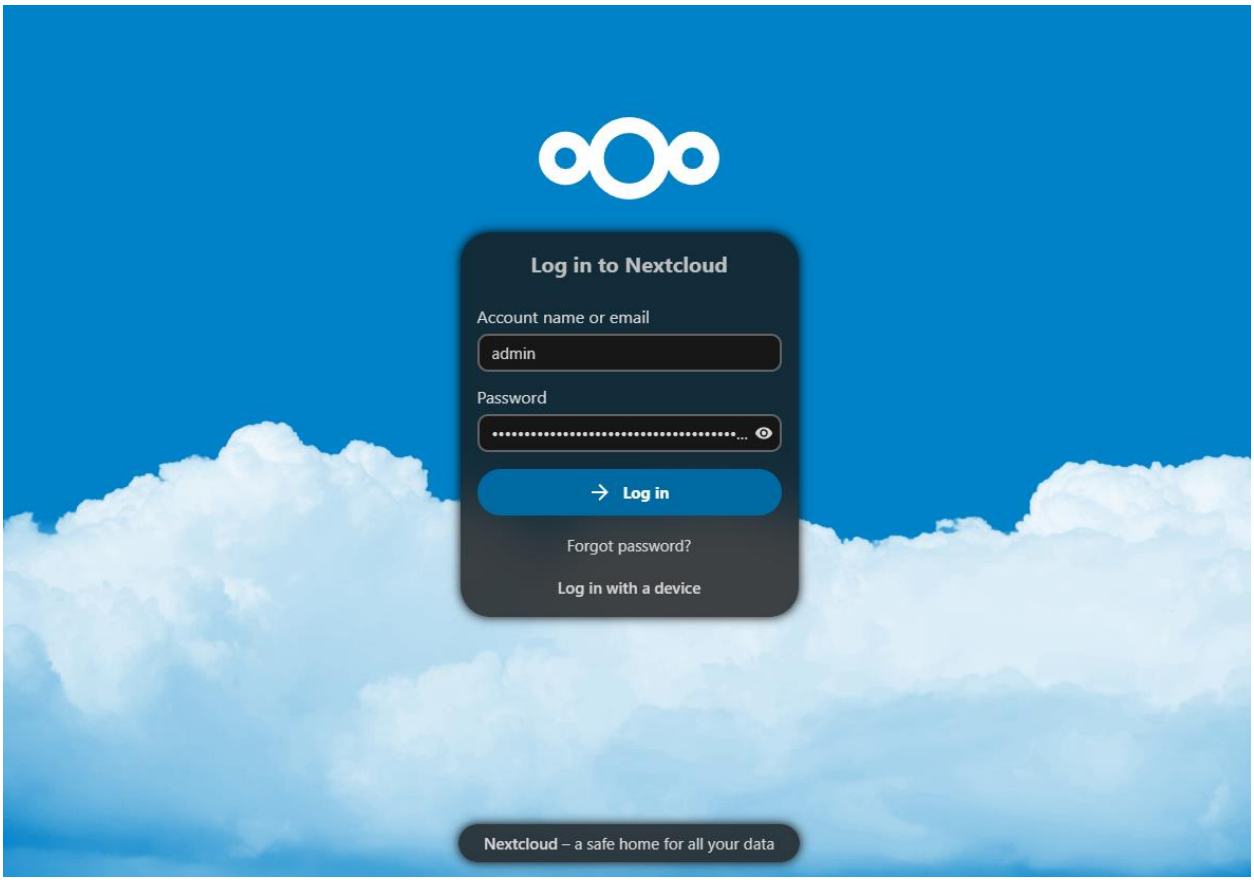


Log In to Nextcloud

Click on the link that says open your nextcloud



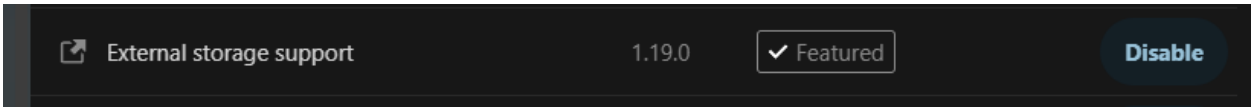
Then log in with your credentials as seen in the following picture



Enable External Storage Support

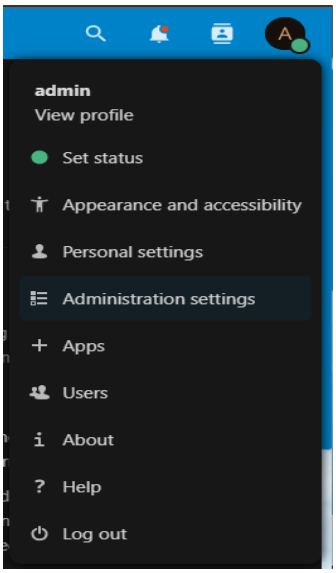
This done by clicking on your profile icon and selecting Apps

In the list you should see the external storage support with an option to enable.

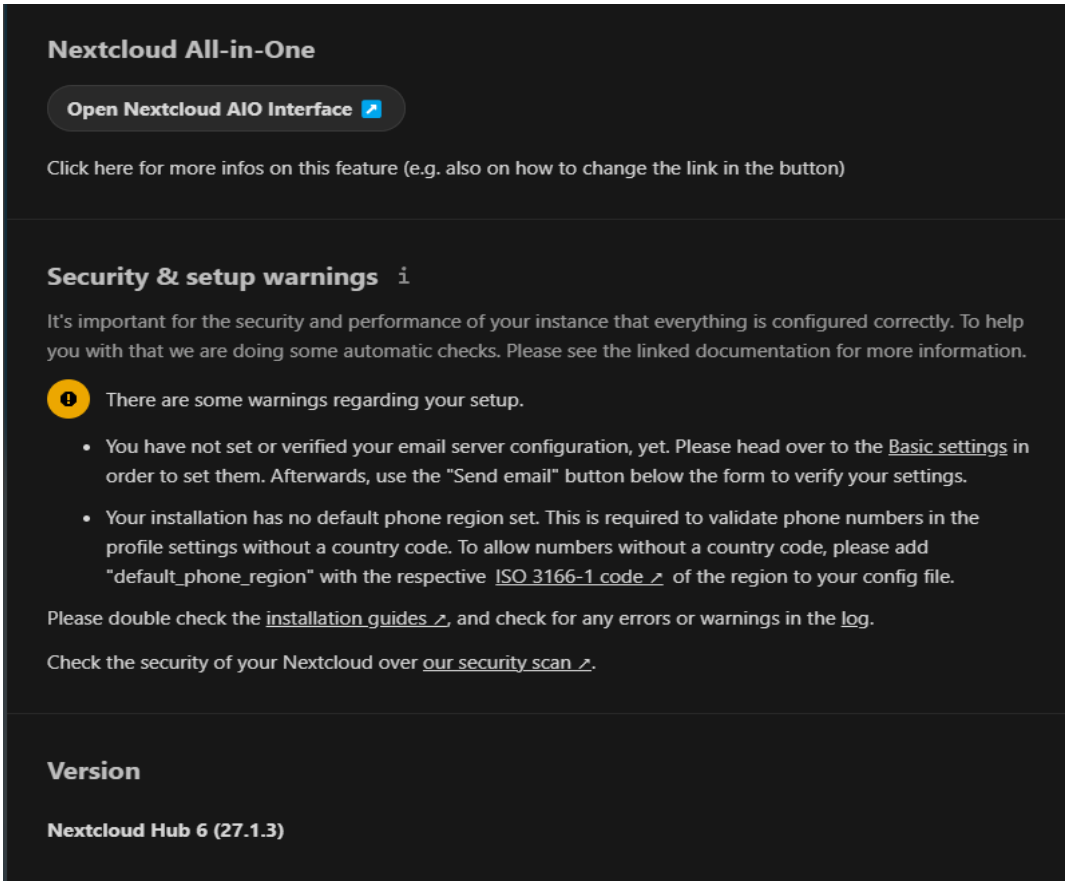


Security Scan

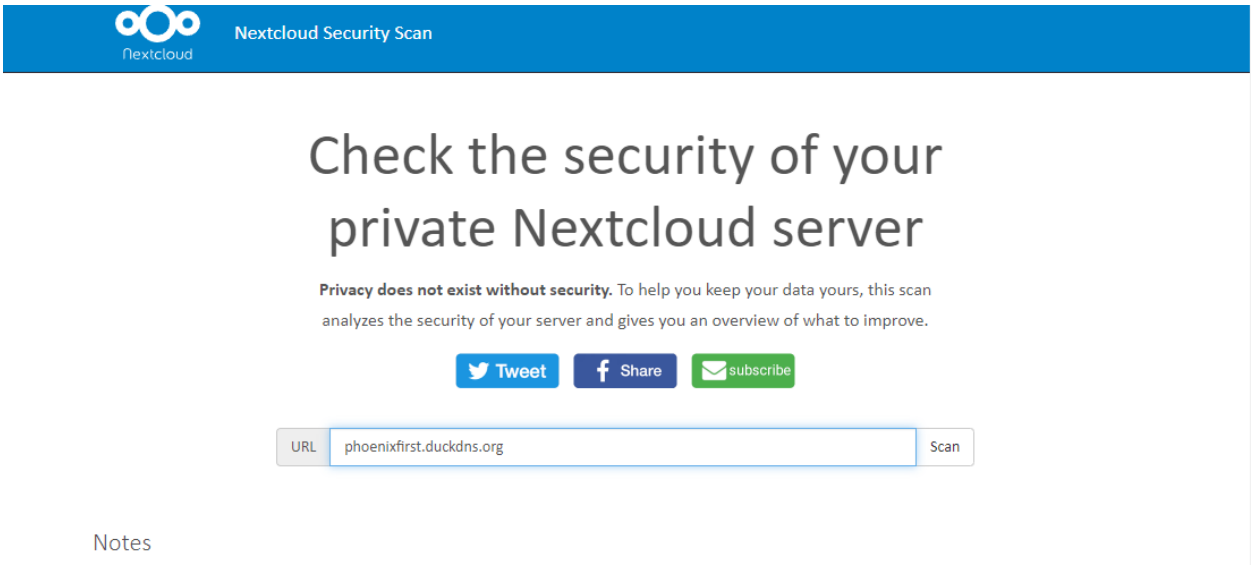
Click on your profile and select Administration Settings



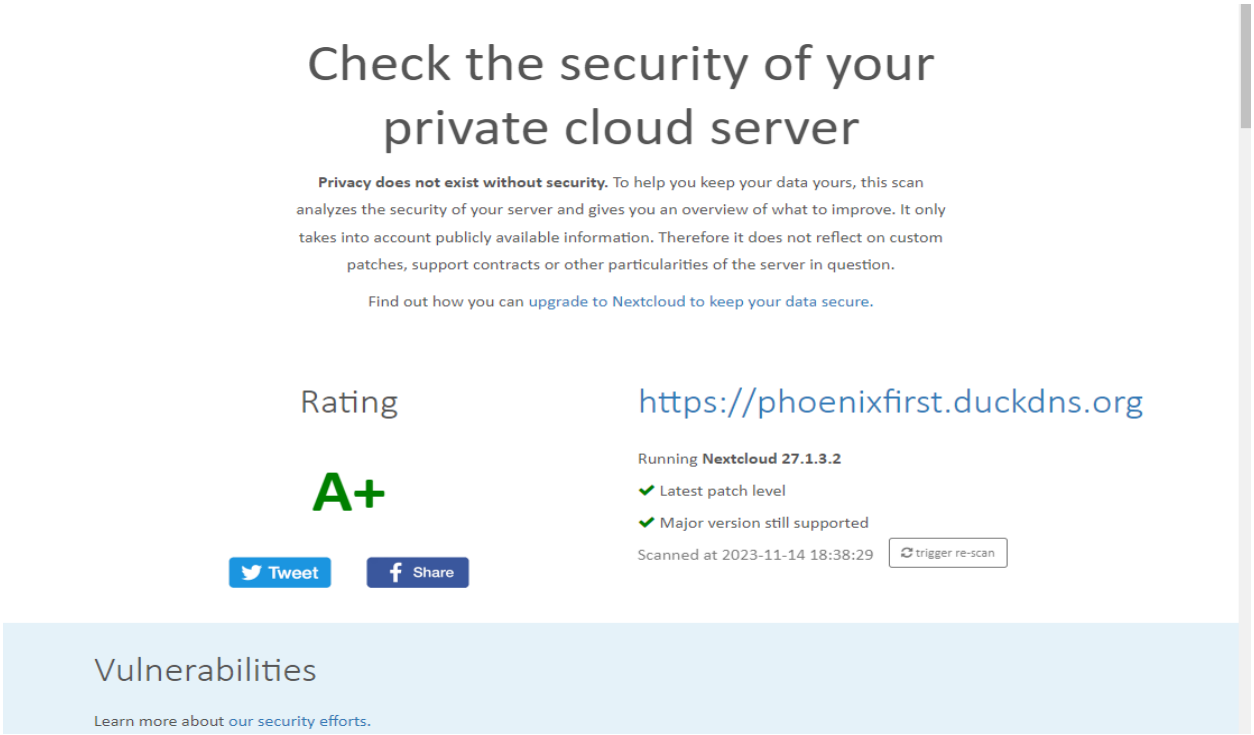
Click the security scan link which will take you to:



Put In your domain to check the security for the server



The Scan should show like so:

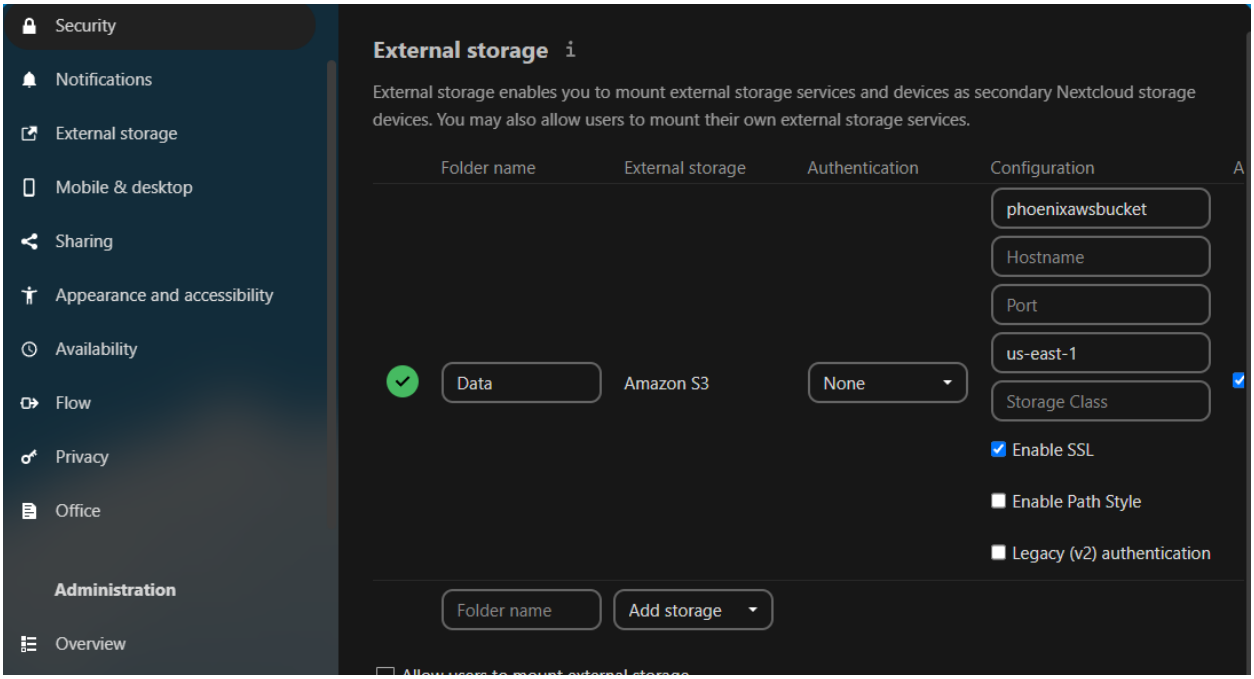


S3 bucket set up on nextcloud

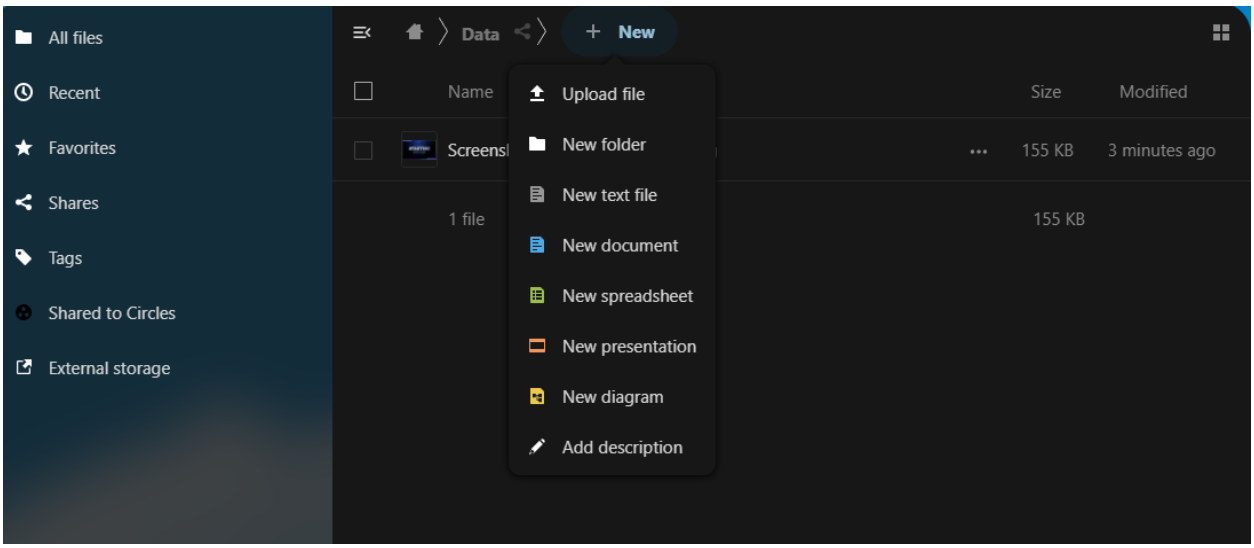
Add Shared Folder “Data” to the external storage settings

This should connect to your AWS S3 bucket

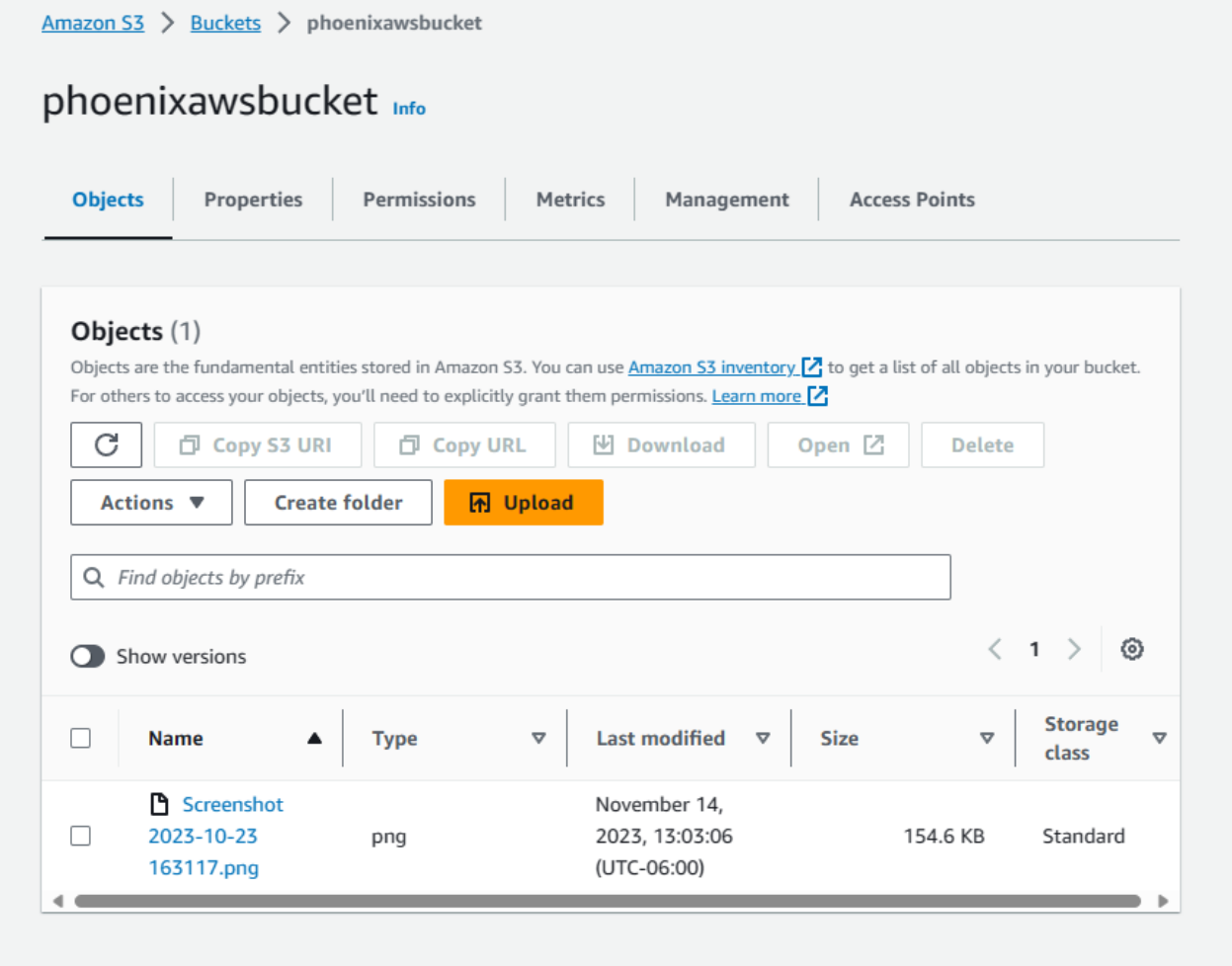
Add your bucket name and region, Authentication was set to none.



Go to the Data folder and upload a test file;

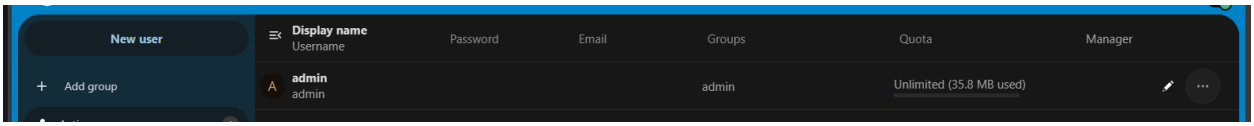


Verify that it has been added to your S3 bucket

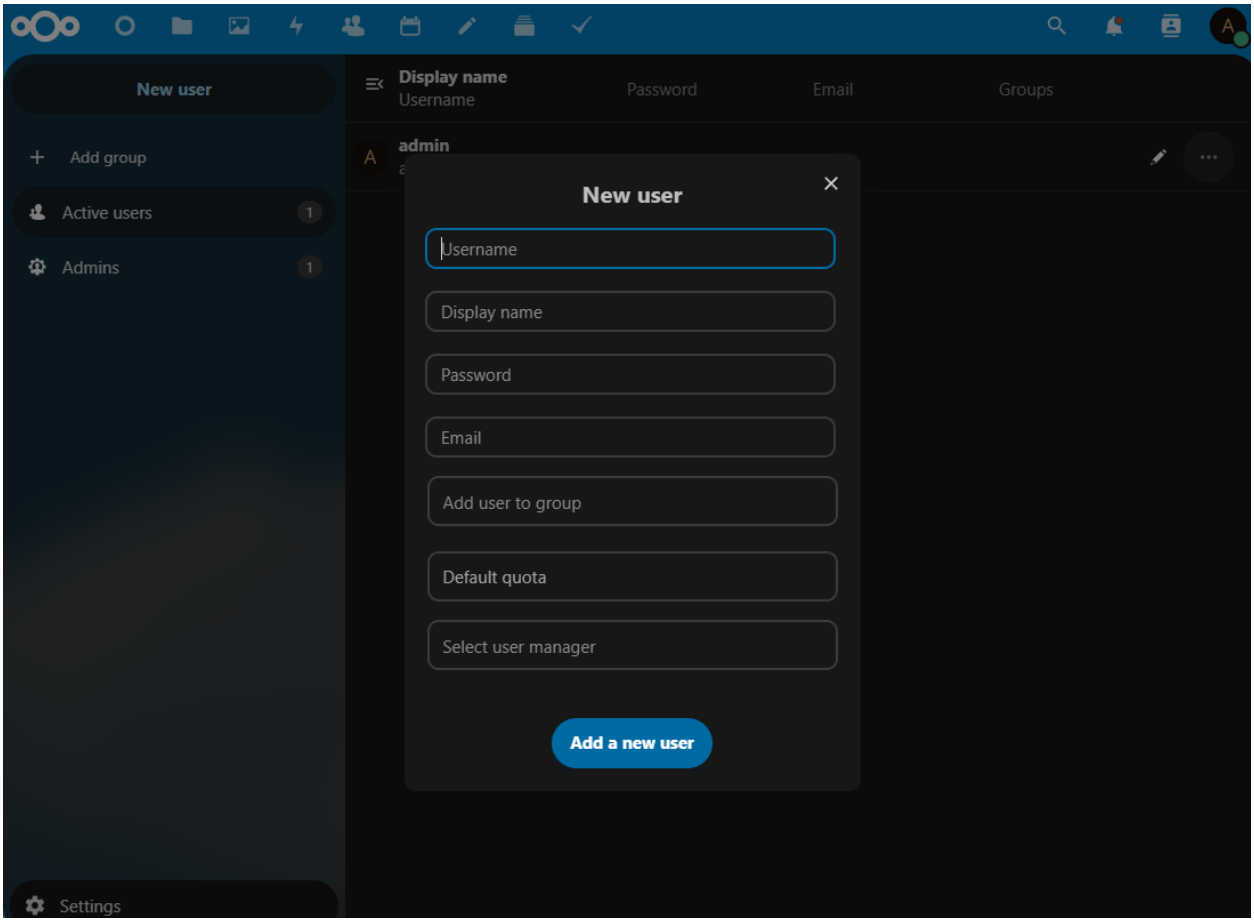


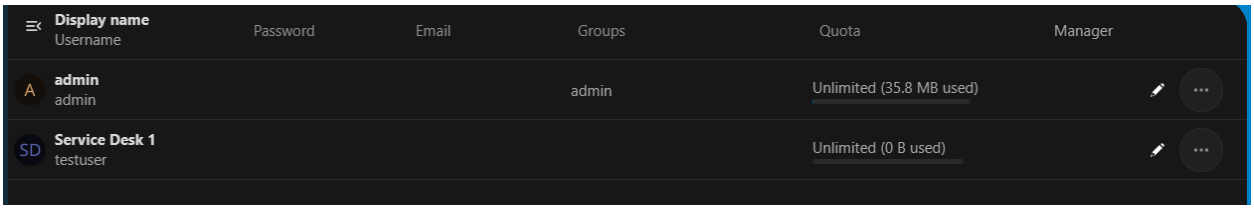
NextCloud New User Creation

Create a new User by going to the user tab and selecting the option new user



Fill the information for a new test user

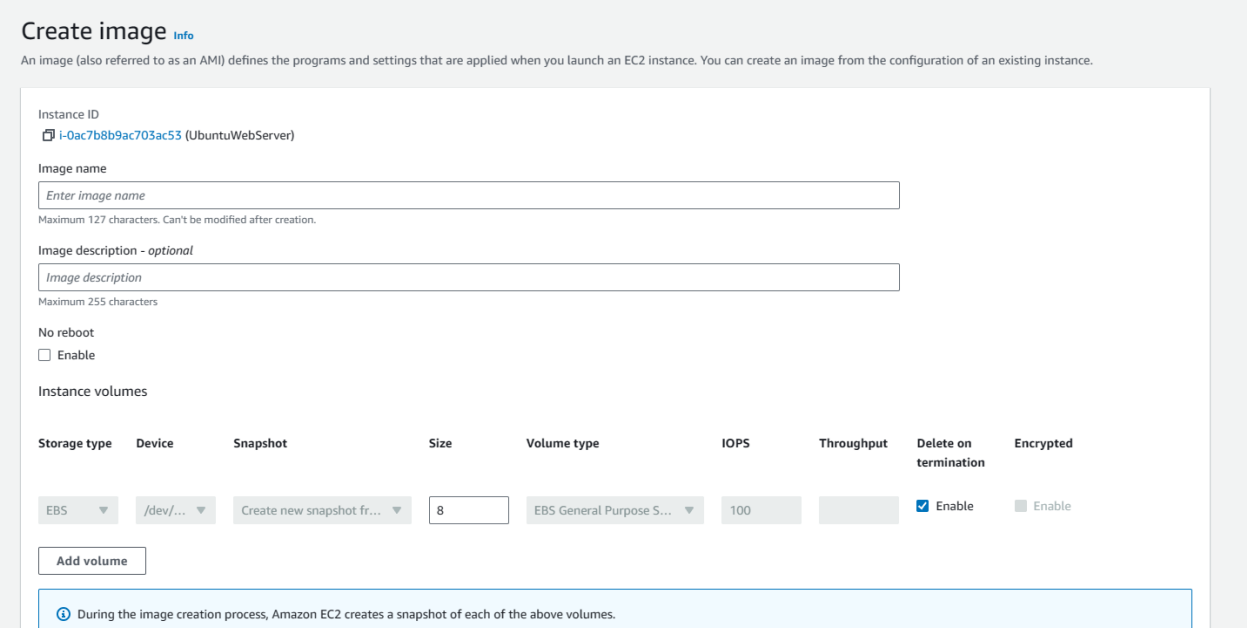




Create Image & Launch Template

Create an Amazon Machine Image from the instance

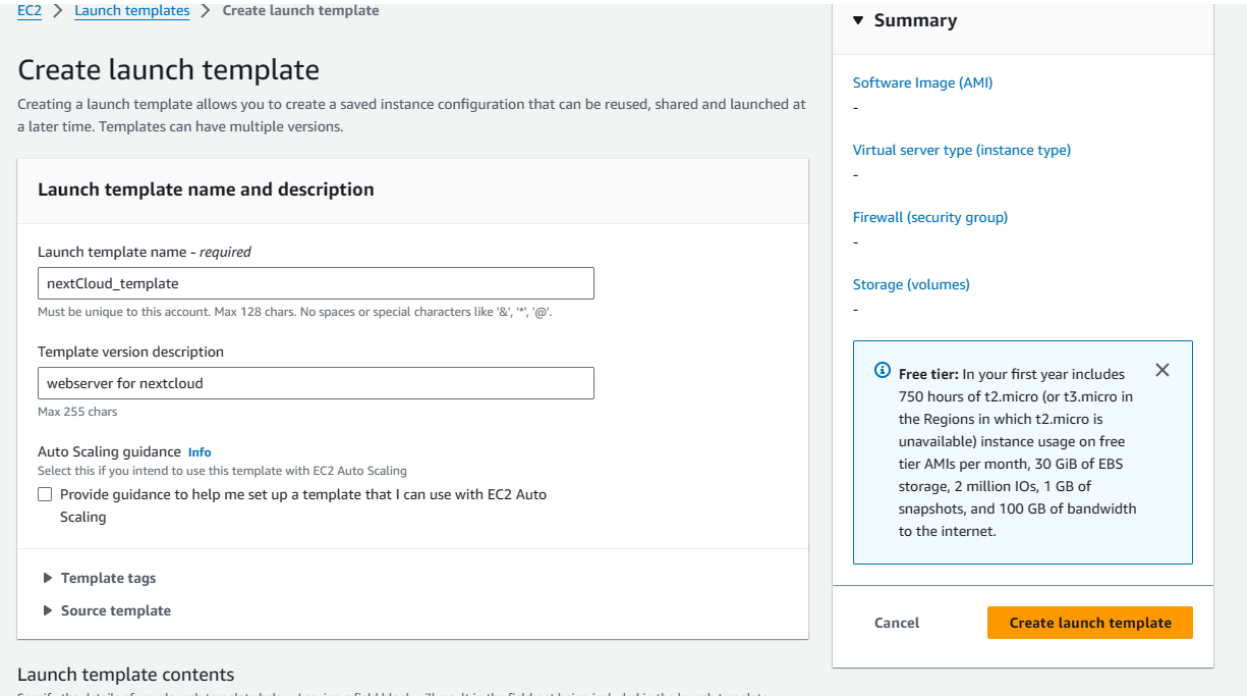
Select the instance -> Actions -> Image and templates -> create image



Hit create Image after filling the information

Create Launch Template

Select Launch Template from the left side menu -> create launch template



Choose “My AMIs” and then choose the previously created Nextcloud AMI.

- Instance type: t2.medium
- Key pair: choose a previously created one.
- Choose the previously created security group (remove any others).

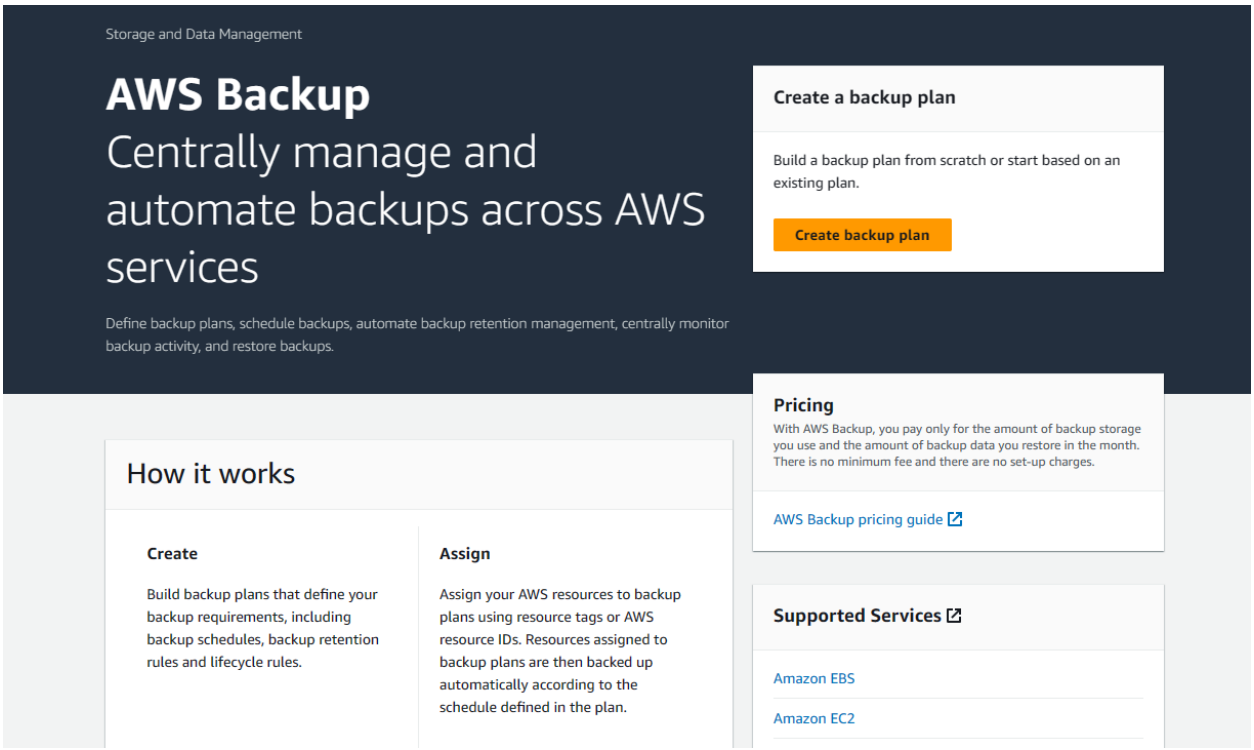
- Under advanced details:
- Choose the “LabInstanceProfile” under IAM instance profile.

You can use this launch template to quickly launch a new fully operational Nextcloud instance, assuming you setup persistent shared storage. Once it’s running, you just need to point your elastic IP at the new instance and everything should work correctly within a few minutes.

Create AWS Backup Plan

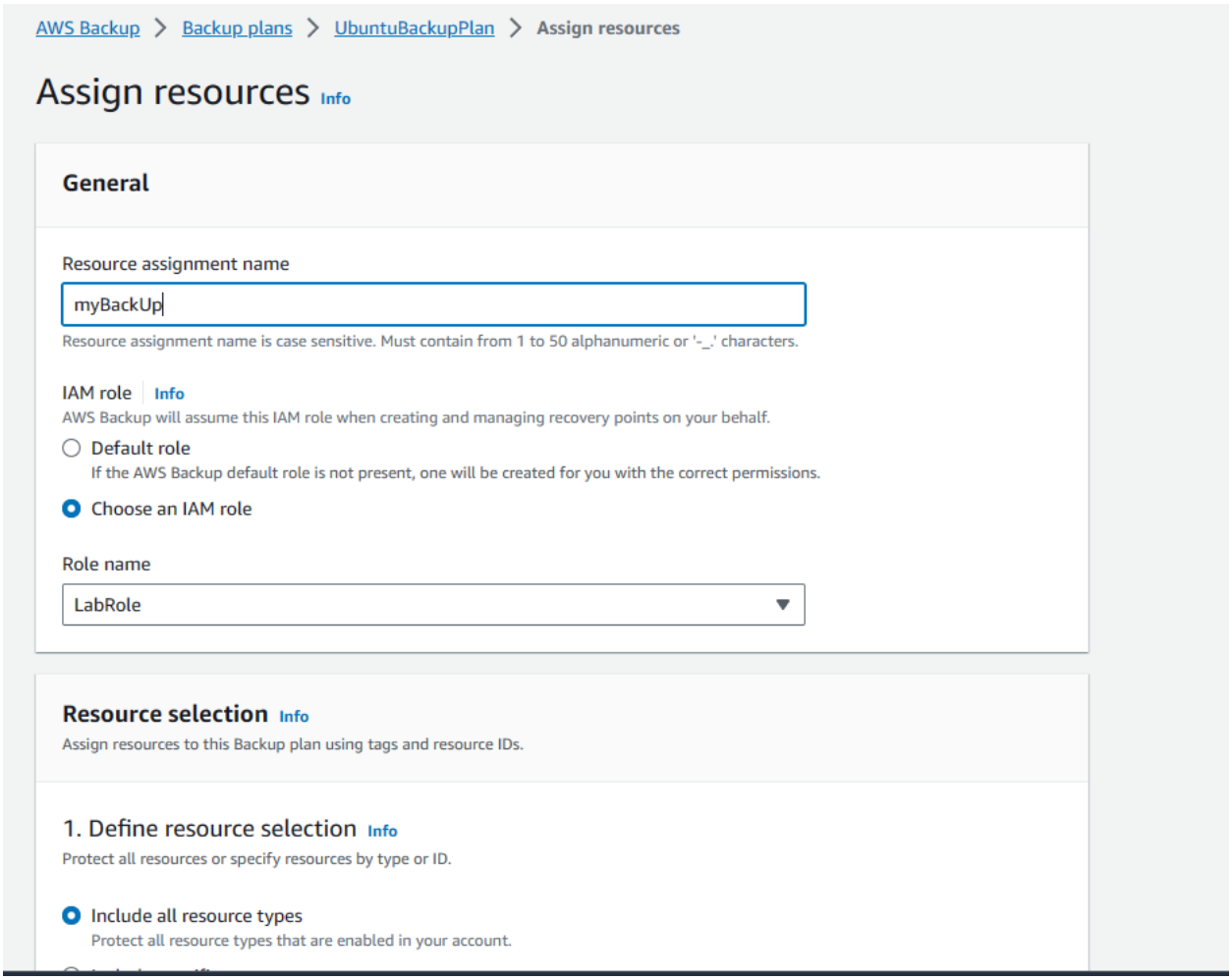
Search services for AWS backup

-select create a backup plan



Select start with a template and choose Daily-Monthly-1yr-Retention -> create plan

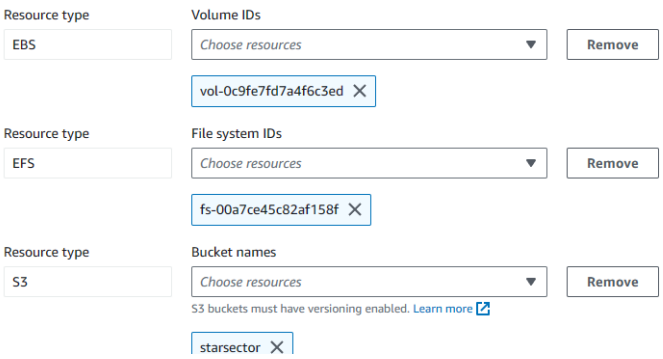
It should ask to assign resources



Select choose an IAM role -> LabRole

Include Specific resources: EBS, EFS, S3

Uncheck all resources and select only your created resources

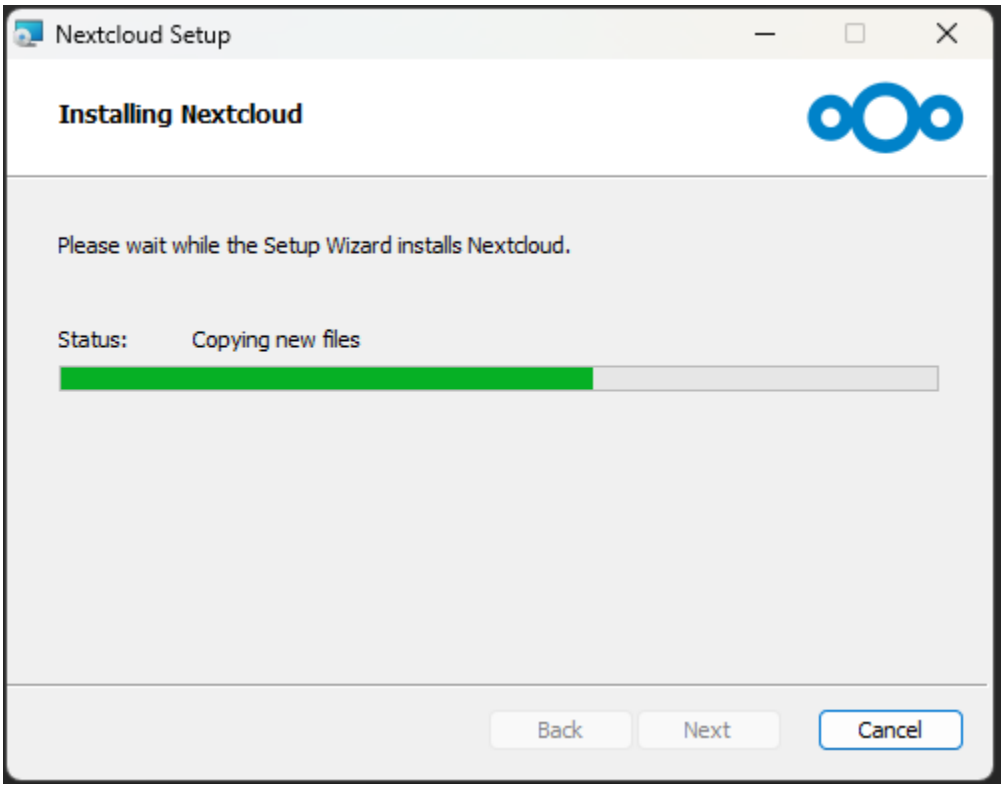


Select Assign resources

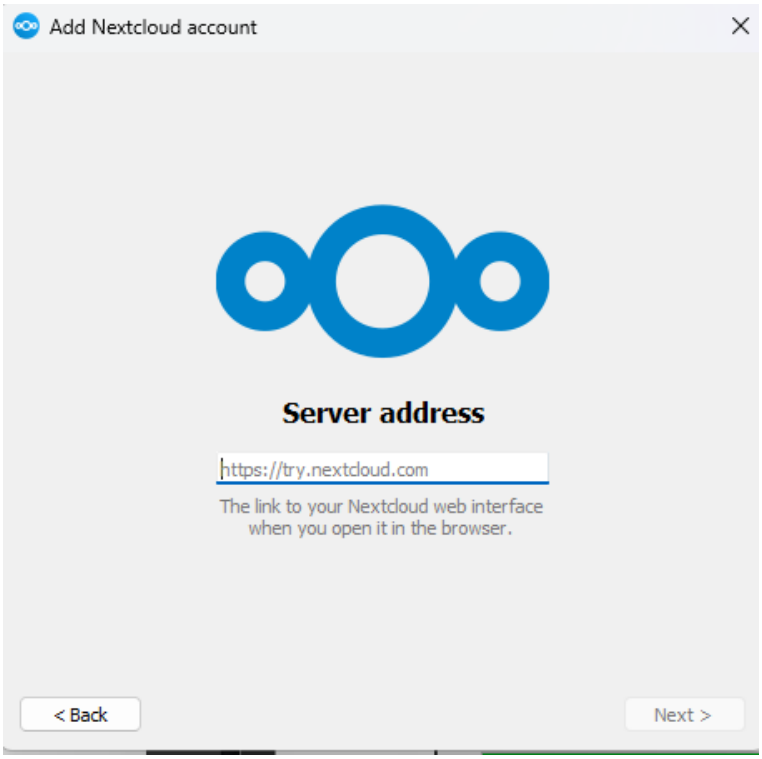
Install and Configure Desktop Client

Download the NextCloud client from [NextCloud Download page]

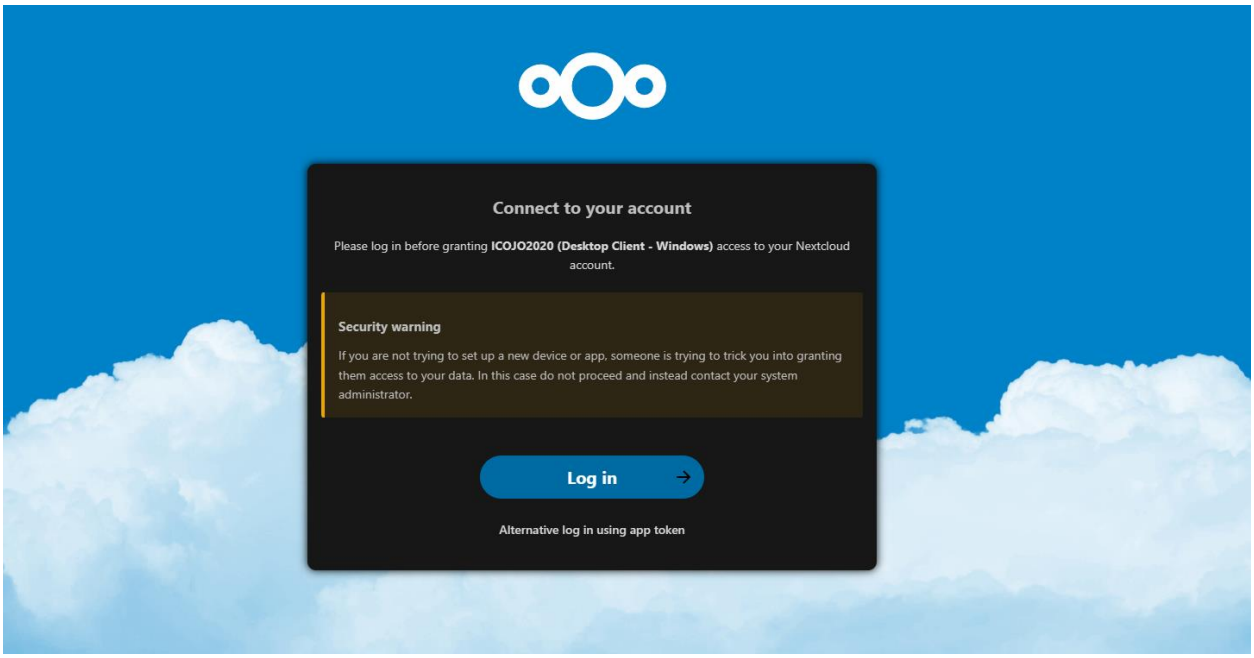
Launch and configure with the wizard that pops up



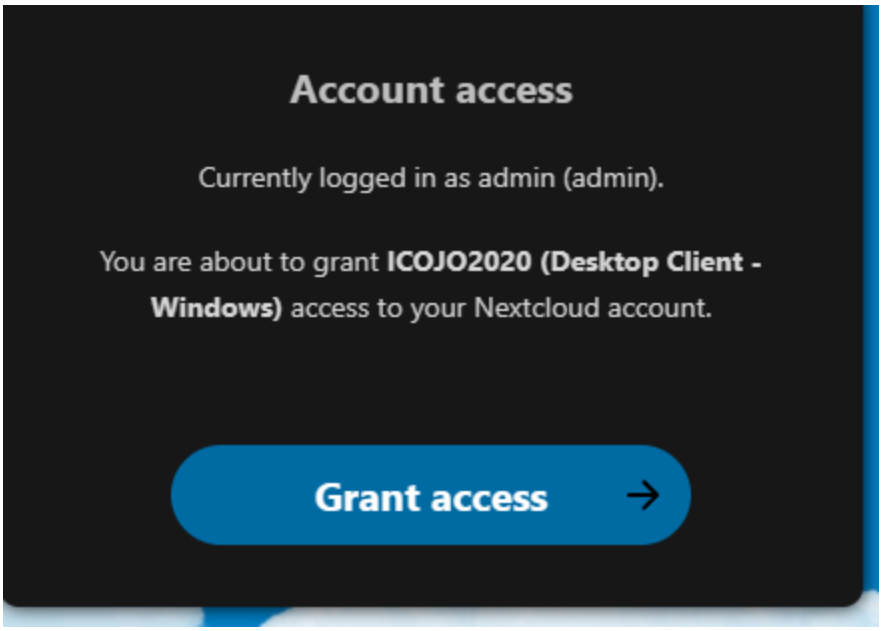
You would need put your nextcloud link that you in a browser in the window below to connect it



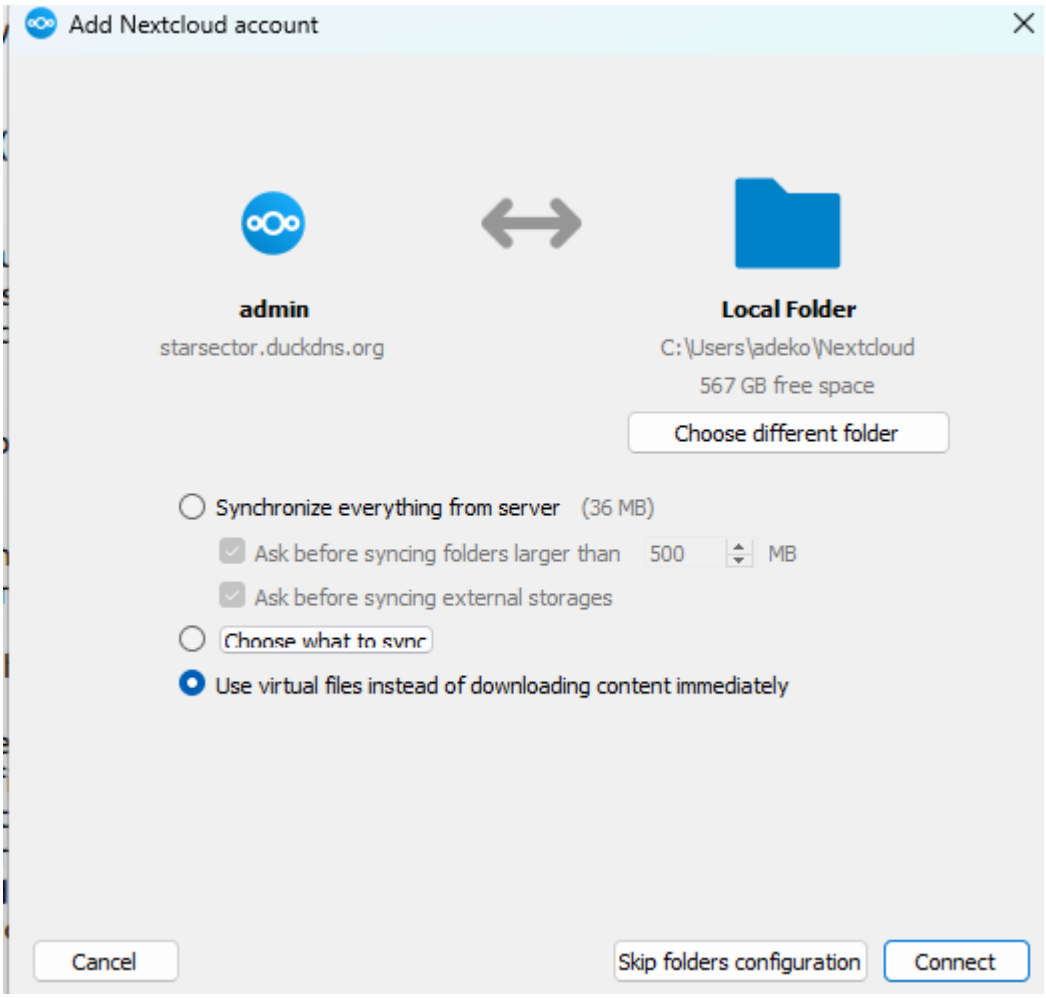
You should get a pop up on your desktop client via the browser



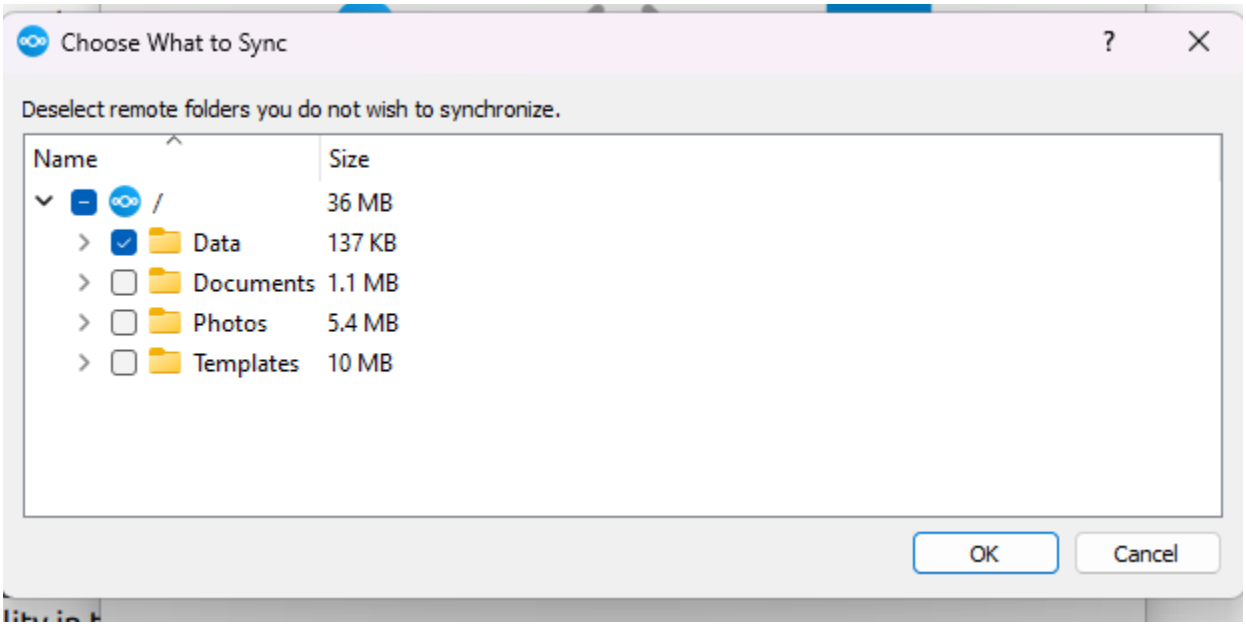
Grant Access

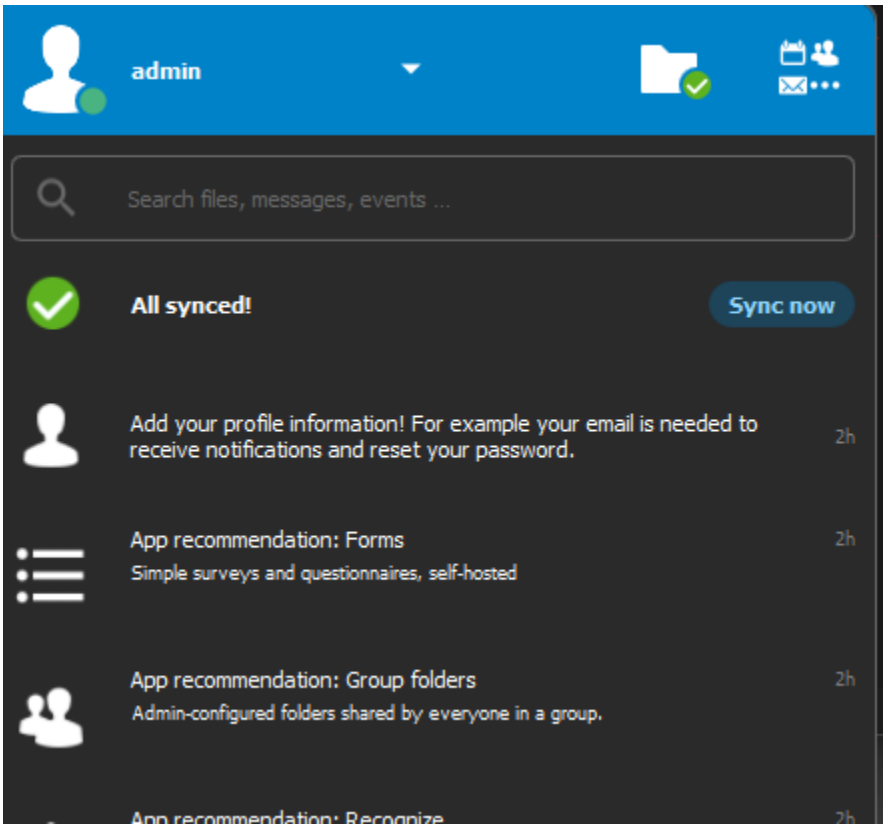


Set up file configurations as you see fit

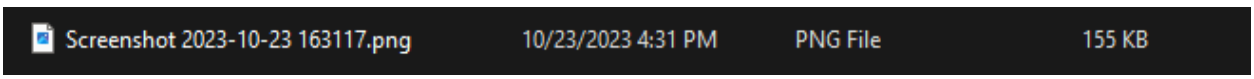


Select choose what to sync -> make sure you uncheck Data folder because its too large, select others





Test by pasting any files on your folder on your computer and check the browser its should sync automatically

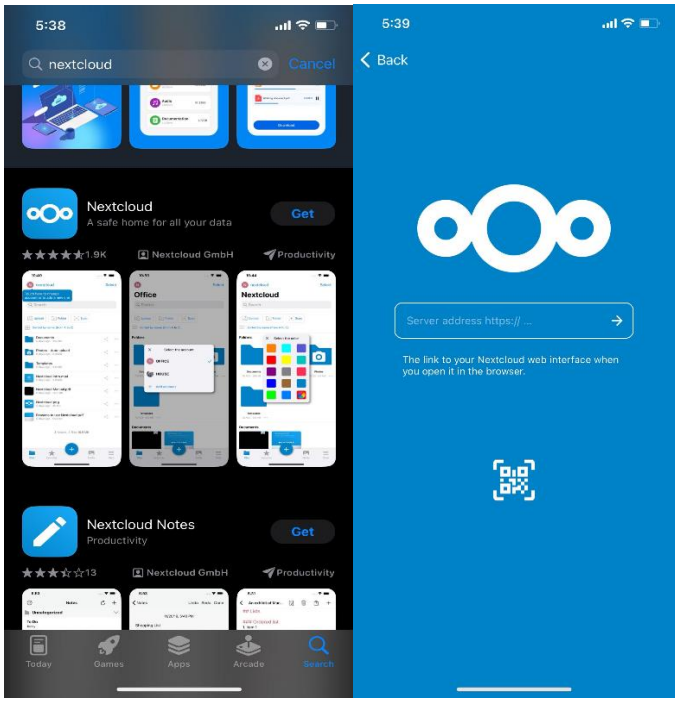


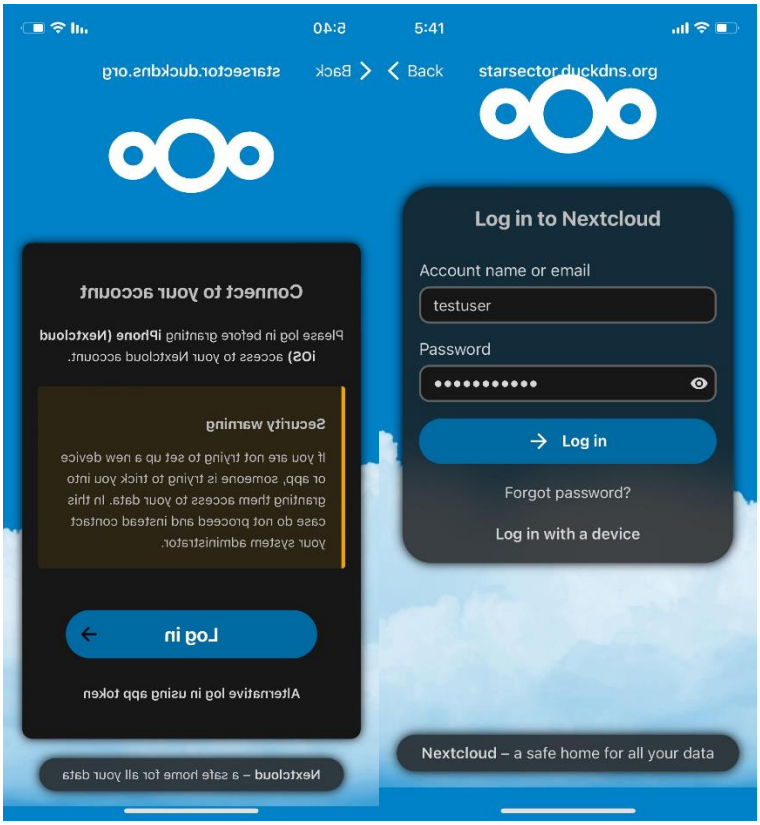
Screenshot 2023-10-23 163117.png 155 KB

Install & Configure Mobile Client

Download from the Appstore

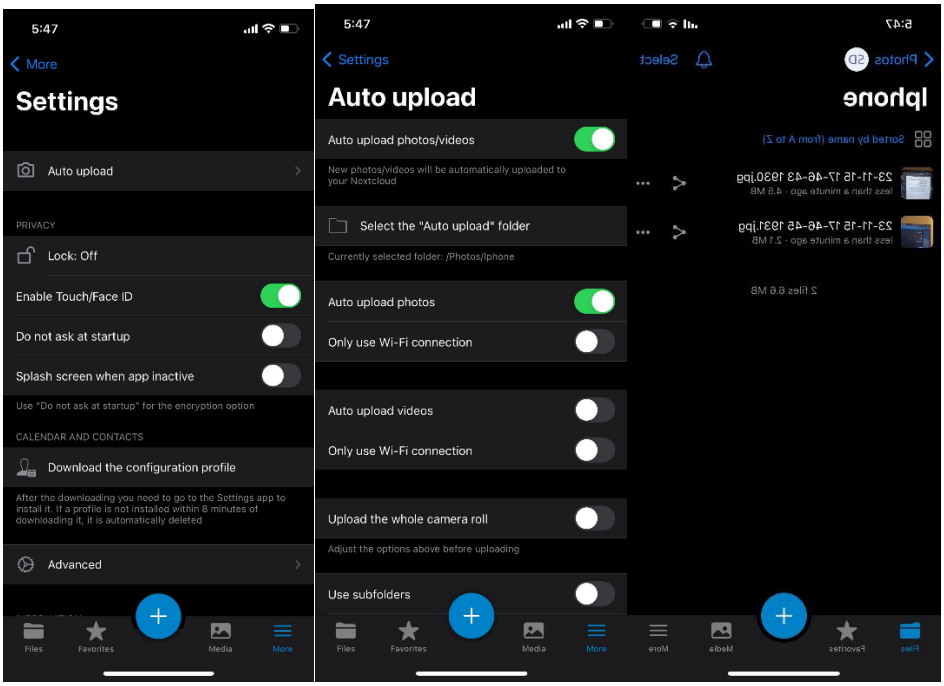
Put in Server information and log in as a User;



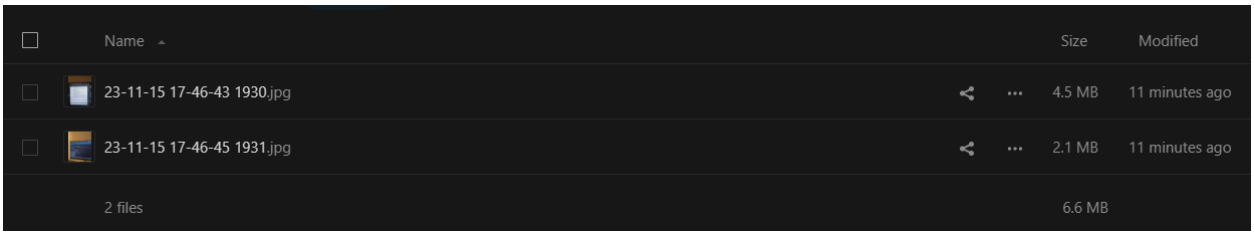


Go to Settings and turn on the auto Upload feature for pictures

Take new picture and check the browser to see if the pictures synced.



The test should be confirmed with image similar to the one below


Name
Size
Modified
23-11-15 17-46-43 1930.jpg
4.5 MB
11 minutes ago
23-11-15 17-46-45 1931.jpg
2.1 MB
11 minutes ago
2 files
6.6 MB