
Project: Linux-Based Self-Hosted Cloud Storage (Nextcloud)

Objective:

Set up **Nextcloud** on an Ubuntu server to create a **self-hosted private cloud storage** like Google Drive or Dropbox.

Features Integrated:

- ✓ **User & Permission Management** (Linux users, groups, sudo privileges)
 - ✓ **Networking & Firewall Configuration** (UFW, Fail2Ban)
 - ✓ **SSL Security** (Let's Encrypt for HTTPS)
 - ✓ **Automated Backups** (Rsync, Cron Jobs)
 - ✓ **Web Server Configuration** (Apache/Nginx)
 - ✓ **Database Setup** (MariaDB/PostgreSQL)
 - ✓ **Monitoring & Logging** (Prometheus/Grafana or ELK stack)
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Step-by-Step Implementation

1. Install Ubuntu & Update System

Ensure your Ubuntu system is up to date:

```
sudo apt update && sudo apt upgrade -y
```

2. Install Required Packages

Install Apache, PHP, and MariaDB:

```
sudo apt install apache2 mariadb-server php php-mysql libapache2-mod-php php-xml php-zip php-mbstring php-curl php-gd php-intl -y
```

3. Secure MariaDB Database

```
sudo mysql_secure_installation
```

- Set a **strong root password**.
- Remove anonymous users.
- Disable remote root login.

4. Create Nextcloud Database & User

```
sudo mysql -u root -p

CREATE DATABASE nextcloud;

CREATE USER 'nextclouduser'@'localhost' IDENTIFIED BY 'YourStrongPassword';

GRANT ALL PRIVILEGES ON nextcloud.* TO 'nextclouduser'@'localhost';

FLUSH PRIVILEGES;

EXIT;
```

5. Download & Install Nextcloud

```
cd /var/www/

sudo wget https://download.nextcloud.com/server/releases/latest.tar.bz2

sudo apt update

sudo apt install bzip2 -y

sudo tar -xvf latest.tar.bz2

sudo chown -R www-data:www-data /var/www/nextcloud

sudo chmod -R 755 /var/www/nextcloud
```

6. Configure Apache for Nextcloud

Create a new Apache configuration file:

```
sudo vi /etc/apache2/sites-available/nextcloud.conf
```

Add the following:

```
<VirtualHost *:80>
    ServerAdmin 567addi.jais@gmail.com
    DocumentRoot /var/www/nextcloud
    ServerName skjptpp.in

    <Directory /var/www/nextcloud/>
        Require all granted
        AllowOverride All
        Options FollowSymLinks MultiViews
    </Directory>

    ErrorLog ${APACHE_LOG_DIR}/nextcloud_error.log
    CustomLog ${APACHE_LOG_DIR}/nextcloud_access.log combined
</VirtualHost>
```

Save and exit.

Enable the site and restart Apache:

```
sudo a2ensite nextcloud.conf
```

```
sudo a2enmod rewrite headers env dir mime
```

```
sudo systemctl restart apache2
```

7. Secure Nextcloud with SSL (Let's Encrypt)

Install Certbot and get a free SSL certificate:

```
sudo apt install certbot python3-certbot-apache -y
```

```
sudo certbot --apache -d skjptpp.in
```

Set up automatic SSL renewal:

```
sudo crontab -e
```

Add:

```
0 3 * * * certbot renew --quiet
```

8. Configure Firewall & Security

Enable UFW (Uncomplicated Firewall):

```
sudo ufw allow 80,443/tcp
```

```
sudo ufw enable
```

Install **Fail2Ban** to prevent brute-force attacks:

```
sudo apt install fail2ban -y
```

9. Configure Automatic Backups

Set up **daily backups** using rsync:

```
sudo crontab -e
```

Add:

```
0 2 * * * rsync -a /var/www/nextcloud /backup/nextcloud_$(date +%F)
```

10 Access & Configure Nextcloud

Now, open a browser and navigate to:

<http://yourdomain.com>

- Follow the setup wizard.
- Use nextclouduser and YourStrongPassword for the database.

```
SELECT User, Host FROM mysql.user;
```

```
SHOW DATABASES;
```

```
nextcloud
```

```
nextclouduser
```

```
YourStrongPassword
```