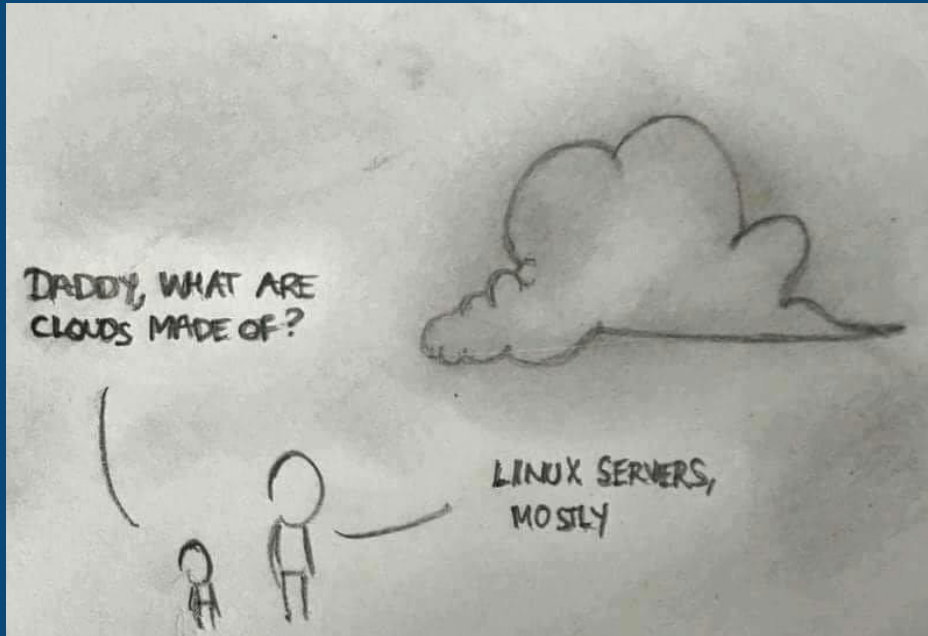




by
Caleb Woodbine
(BobyMCbobs)

Hold up! What is the cloud?



"A cloud server is a logical server that is built, hosted and delivered through a cloud computing platform over the Internet. Cloud servers possess and exhibit similar capabilities and functionality to a typical server but are accessed remotely from a cloud service provider." - Some site

ELI5

One or more remote computers which can be used for such things as a storing data or processing

The cloud

```
graph TD; Cloud((The cloud)) --- Storage; Cloud --- Analytics; Cloud --- Automation; Cloud --- Computing;
```

Storage

Analytics

Automation

Computing

Some things which the cloud is used for

The cloud

```
graph TD; Cloud((The cloud)) --- Storage(Storage); Cloud --- Analytics[Analytics]; Cloud --- Automation[Automation]; Cloud --- Computing[Computing];
```

Storage

Analytics

Automation

Computing

General consumer clouds – current forecast



General consumer clouds – the state

- Not truly private
- Dodgy terms and conditions (legal liability)
- No control over data access
- **Complete** trust in a singular provider (vendor lock-in)
- Nothing you can do about cyberattacks (you won't know if there's one even happening in most cases)
- **Cost** (can very pricey or suspiciously cheap)
- **In-flexible** (e.g: no personalising of which apps to use or what they do)
- Proprietary shenanigans

Does the cloud doesn't have to be
any of those?

It all comes down to...

***WHO
OWNS
YOUR
DATA?***

But, what if I were to tell you...

There's a cloud which is

- Self-hostable
- Extensible
- Integratable
- Enterprise grade/quality
- Secure
- Private
- Encryptable
- Modular
- Scalable
- Highly configurable
- Easy to use, manage, and setup
- Community based and driven
- Runs almost anywhere

And...

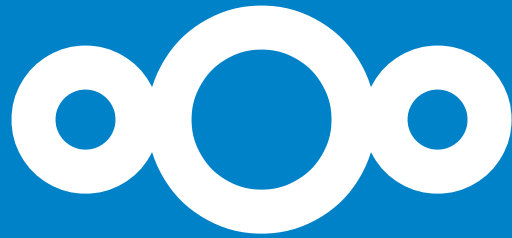
Most of all is
100% FLOSS/FOSS

Uses AGPL-3.0

Too good to be true?

(spoiler: nope!)

Presenting...



Nextcloud

A private cloud just for you!

What can I do with Nextcloud? (1/2)

- Store and access documents
- Manage and sync: Contacts, Mail, Calendars, Files, etc...
- Organise tasks for projects (like Trello) with Deck
- Write notes
- Manage passwords
- Call and/or chat with others in your instance
- Use 2FA
- Configure ALCs

What can I do with Nextcloud? (2/2)

- Play audio and video files
- Set up End-To-End encryption (protection against evil sys-admins)
- Edit documents (txt, md, odt*, etc...)
- Integrate with, sync, and backup devices (i.e Dejadup)
- For enterprises integrate with LDAP
- Share content between users on a given server
- Share content between servers (see Federation)

and **much** more...

*via Collabora Online or OnlyOffice integration

Web interface - Files

The screenshot displays the Nextcloud web interface. At the top, there is a blue navigation bar with various icons for home, lightning bolt, image, search, mail, users, calendar, document, folder, and a magnifying glass. On the right side of this bar are search, notification, user profile, and a yellow circle with the letter 'D'. Below the navigation bar is a left sidebar with navigation options: All files (selected), Recent, Favorites, Shares, and Tags. The main content area shows a file list with columns for Name, Size, and Modified. The list includes folders for Documents, Notes, and Photos, and files for New Document.odt, Nextcloud.mp4, and Nextcloud Manual.pdf. A summary row indicates '3 folders and 3 files' with a total size of '7.1 MB'. At the bottom left, there is a 'Deleted files' section, a storage usage indicator showing '7.1 MB used', and a 'Settings' link.

Name	Size	Modified
Documents	77 KB	a month ago
Notes	0 KB	10 minutes ago
Photos	2.3 MB	a month ago
New Document.odt	8 KB	3 days ago
Nextcloud.mp4	452 KB	a month ago
Nextcloud Manual.pdf	4.3 MB	a month ago
3 folders and 3 files	7.1 MB	

Deleted files

7.1 MB used

Settings

Web interface - Calendar

The screenshot displays a web-based calendar interface for February 2019. The interface is divided into several sections:

- Top Navigation Bar:** Contains various utility icons such as a folder, lightning bolt, image, search, mail, people, calendar, and a user profile icon labeled 'D'.
- Calendar Header:** Shows the month 'February 2019' with navigation arrows. Below it are tabs for 'Day', 'Week', and 'Month', with 'Month' selected. A 'Today' button is also present.
- Left Sidebar:** Includes a '+ New Calendar' button, a 'Personal' calendar selection (indicated by a blue dot), and a '+ New Subscription' button.
- Main Calendar Grid:** A grid of days from Sunday to Saturday. The date February 12th is highlighted in yellow, and a blue circle with the number '12' is placed over it.
- Bottom Left:** A 'Settings & import' link with a gear icon.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	1	2
3	4	5	6	7	8	9

Web interface - Notes

The screenshot displays a web interface for a notes application. At the top, a blue navigation bar contains several icons: a logo, a folder, a lightning bolt, a photo, a magnifying glass, an envelope, a group of people, a calendar, a document with a checkmark, a document with a list, and a magnifying glass. On the right side of the bar are a search icon, a bell, a user profile icon, and a yellow circle with the letter 'D'. Below the navigation bar, the interface is split into two main sections. On the left is a sidebar with a '+ New note' button at the top and a list of notes below. The first note in the list is 'Sample note', which has a trash icon and a star icon to its right. The main area on the right shows the content of the selected note, titled 'Sample note', with the text 'Thank you, very cool'. At the bottom left, there is a 'Settings' link with a gear icon. At the bottom center, the text 'Uncategorized' is followed by a pencil icon and '6 words'. At the bottom right, there is a small square icon with a white background and a black border.

Web interface - Deck

The image shows the Nextcloud Deck web interface. At the top is a blue navigation bar with icons for home, search, and other functions. Below the navigation bar is a sidebar on the left with a list of boards: 'All Boards', 'Archived boards', 'Shared boards', 'Personal' (selected), and 'Create a new board'. The main area displays a Kanban board with three columns: 'To do', 'Doing', and 'Done'. The 'To do' column contains one card 'Example Task 3'. The 'Doing' column contains two cards: 'Example Task 2' and 'Enjoy Nextcloud'. The 'Done' column contains one card 'Example Task 1'. Each card has a three-dot menu icon in the bottom right corner. Below each column is a button with a plus sign to add new cards. On the right side, there is a panel for the selected card 'Enjoy Nextcloud'. This panel shows the card title, a search for tags, a user icon, a timer set to '00:00', and tabs for 'Description', 'Attachments', and 'Timeline'. The 'Description' tab is active, showing the text 'Add a card description...'. At the bottom left, there is a 'Settings' link with a gear icon.

Web interface - Talk

The screenshot displays the Talk web interface. At the top, a blue navigation bar contains icons for home, lightning bolt, image, search, and notification. Below this, a sidebar on the left shows a 'New conversation ...' button and a contact named 'abcdert' with a yellow profile picture. The main chat area features a date separator for 'Today, February 25, 2019' and system messages: 'You created the conversation' and 'You added abcdert' (with a yellow profile picture). A message from 'admin' (with an orange profile picture) is partially visible at the bottom, with a text input field containing 'New message ...' and a send button. On the right, a panel titled 'Conversation with abcdert' includes a 'Start call' button, a 'Share link' checkbox, a 'Participants' section with two listed users ('admin (moderator)' and 'abcdert (moderator)'), and an 'Add participant ...' input field.

Web interface - Settings


The screenshot shows the Nextcloud web interface settings page. The top navigation bar is blue with various icons. The left sidebar is white and contains a list of settings categories: Personal, Administration, and a list of specific settings. The main content area is white and displays the user's profile information and various settings fields.


Personal


- Personal info
- Security
- Activity
- Mobile & desktop
- Accessibility
- Sharing


Administration

- Overview
- Basic settings
- Monitoring
- Support
- Sharing
- Security
- Theming
- Groupware
- Passwords
- Activity
- Workflow
- File access control
- Talk
- Collabora Online
- Usage survey

Profile picture  -


png or jpg, max. 20 MB


Full name  -


Email  -

For password reset and notifications

Language

Help translate


Phone number  -


Address  -

Locale


02/12/2019 9:39:32 PM
Week starts on Sunday

Details

 You are a member of the following groups:
admin

 You are using 7.1 MB

Developed by the Nextcloud community, the source code is licensed under the AGPL.



Web interface - Apps

App Name	Version	Status	Actions
Passwords	2019.2.0		Update to 2019.2.1 Disable
Two Factor TOTP Provider	2.1.0	✓ Official	Update to 2.1.1 Disable
Accessibility	1.1.0	✓ Official	Disable
Activity	2.8.2	✓ Official	Disable
Auditing / Logging	1.5.0	✓ Official	Disable
Brute-force settings	1.3.0	✓ Official	Disable
Calendar	1.6.4	✓ Official	Disable
Checksum	0.4.2		Disable
Collabora Online	3.2.0	✓ Official	Disable
Collaborative tags	1.5.0	✓ Official	Disable
Comments	1.5.0	✓ Official	Disable
Contacts	3.0.3	✓ Official	Disable
Deck	0.5.2		Disable
Deleted files	1.5.0	✓ Official	Disable
End-to-End Encryption	1.1.0	✓ Official	Disable
Federation	1.5.0	✓ Official	Disable
File access control	1.5.0	✓ Official	Disable
File sharing	1.7.0	✓ Official	Disable
Files Right Click	0.11.0		Disable
Files Right Click	0.11.0		Disable
Files Right Click	0.11.0		Disable

Web interface - Users

The screenshot displays a user management web interface. At the top, there is a blue header bar with navigation icons. Below the header, a sidebar on the left provides navigation options: '+ New user', '+ Add group', 'Everyone' (1), 'Admins' (1), 'Groups' (listing 'boplug' with 2 users and 'business1' with 1 user), and 'Settings' at the bottom. The main content area features a table with the following columns: Username, Display name, Password, Email, Groups, Group admin for, and Quota. The table lists three users: 'admin' (Group: admin), 'user1' (Group: boplug), and 'abcdef' (Groups: boplug, business1). Each user row includes a 'Set user as admin for' button and a 'Quota' field (e.g., 'Unlimited'). A blue confirmation button with a checkmark is visible at the end of the first row.

Username	Display name	Password	Email	Groups	Group admin for	Quota
+ Username	Display name	Password	Email	boplug	Set user as admin for	Default quota
A admin	admin	New password		admin	Set user as admin for	Unlimited
U user1	user1	New password		boplug	Set user as admin for	Unlimited
A abcdef	abcderf	New password		boplug business1	Set user as admin for	Unlimited

Command line interface (1/3)

```
myserver:~ # nextcloud.oc
```

```
The current PHP memory limit is below the recommended value of 512MB.
```

```
Nextcloud 15.0.5
```

Usage:

```
command [options] [arguments]
```

Options:

```
-h, --help           Display this help message
-q, --quiet          Do not output any message
-V, --version        Display this application version
--ansi              Force ANSI output
--no-ansi           Disable ANSI output
-n, --no-interaction Do not ask any interactive question
--no-warnings       Skip global warnings, show command output only
-v|vv|vvv, --verbose Increase the verbosity of messages: 1 for normal output, 2 for more verbose output and 3 for debug
```

Available commands:

```
check                check dependencies of the server environment
help                 Displays help for a command
list                 Lists commands
status               show some status information
upgrade              run upgrade routines after installation of a new release. The release has to be installed before.
activity
activity:send-mails Sends the activity notification mails
app
app:check-code       check code to be compliant
app:disable           disable an app
app:enable           enable an app
app:getpath          Get an absolute path to the app directory
app:install          install an app
app:list             List all available apps
app:remove           remove an app
app:update           update an app or all apps
audioplayer
audioplayer:reset    reset audio player library
audioplayer:scan     scan for new audio files; use -v for debugging
background
background:ajax      Use ajax to run background jobs
background:cron      Use cron to run background jobs
background:webcron   Use webcron to run background jobs
config
config:app:delete    Delete an app config value
config:app:get        Get an app config value
config:app:set        Set an app config value
config:import        Import a list of configs
config:list           List all configs
config:system:delete Delete a system config value
config:system:get     Get a system config value
config:system:set     Set a system config value
dav
dav:create-addressbook Create a dav addressbook
dav:create-calendar  Create a dav calendar
dav:remove-invalid-shares Remove invalid dav shares
dav:sync-birthday-calendar Synchronizes the birthday calendar
```

Command line interface (2/3)

```
dav:sync-system-addressbook      Synchronizes users to the system addressbook
db
db:add-missing-indices            Add missing indices to the database tables
db:convert-filecache-bigint      Convert the ID columns of the filecache to BigInt
db:convert-mysql-charset        Convert charset of MySQL/MariaDB to use utf8mb4
db:convert-type                  Convert the Nextcloud database to the newly configured one
deck
deck:export                      Export a JSON dump of user data
encryption
encryption:change-key-storage-root Change key storage root
encryption:decrypt-all          Disable server-side encryption and decrypt all files
encryption:disable              Disable encryption
encryption:enable               Enable encryption
encryption:encrypt-all         Encrypt all files for all users
encryption:list-modules         List all available encryption modules
encryption:set-default-module   Set the encryption default module
encryption:show-key-storage-root Show current key storage root
encryption:status              Lists the current status of encryption
federation
federation:sync-addressbooks    Synchronizes addressbooks of all federated clouds
files
files:cleanup                   cleanup filecache
files:scan                      rescan filesystem
files:scan-app-data            rescan the AppData folder
files:transfer-ownership       All files and folders are moved to another user - shares are moved as well.
group
group:add                      Add a group
group:adduser                  add a user to a group
group:delete                   Remove a group
group:list                     list configured groups
group:removeuser              remove a user from a group
integrity
integrity:check-app            Check integrity of an app using a signature.
integrity:check-core          Check integrity of core code using a signature.
integrity:sign-app            Signs an app using a private key.
integrity:sign-core           Sign core using a private key.
l10n
l10n:createjs                 Create javascript translation files for a given app
log
log:file                       manipulate logging backend
log:manage                    manage logging configuration
maintenance
maintenance:data-fingerprint   update the systems data-fingerprint after a backup is restored
maintenance:mimetype:update-db Update database mimetypes and update filecache
maintenance:mimetype:update-js Update mimetypelist.js
maintenance:mode              set maintenance mode
maintenance:repair            repair this installation
maintenance:theme:update      Apply custom theme changes
maintenance:update:htaccess   Updates the .htaccess file
migrations
migrations:execute            Execute a single migration version manually.
migrations:generate
migrations:generate-from-schema
migrations:migrate            Execute a migration to a specified version or the latest available version.
migrations:status            View the status of a set of migrations.
```


Command line interface (3/3)

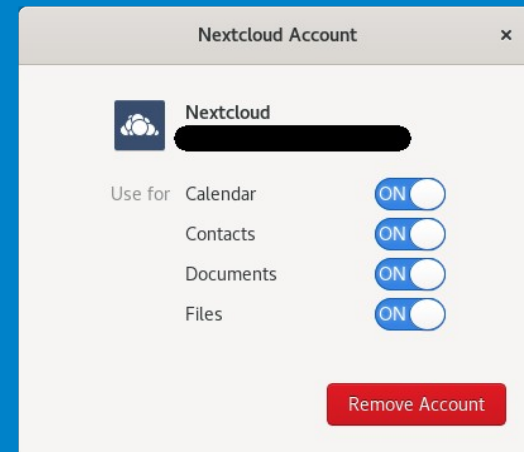
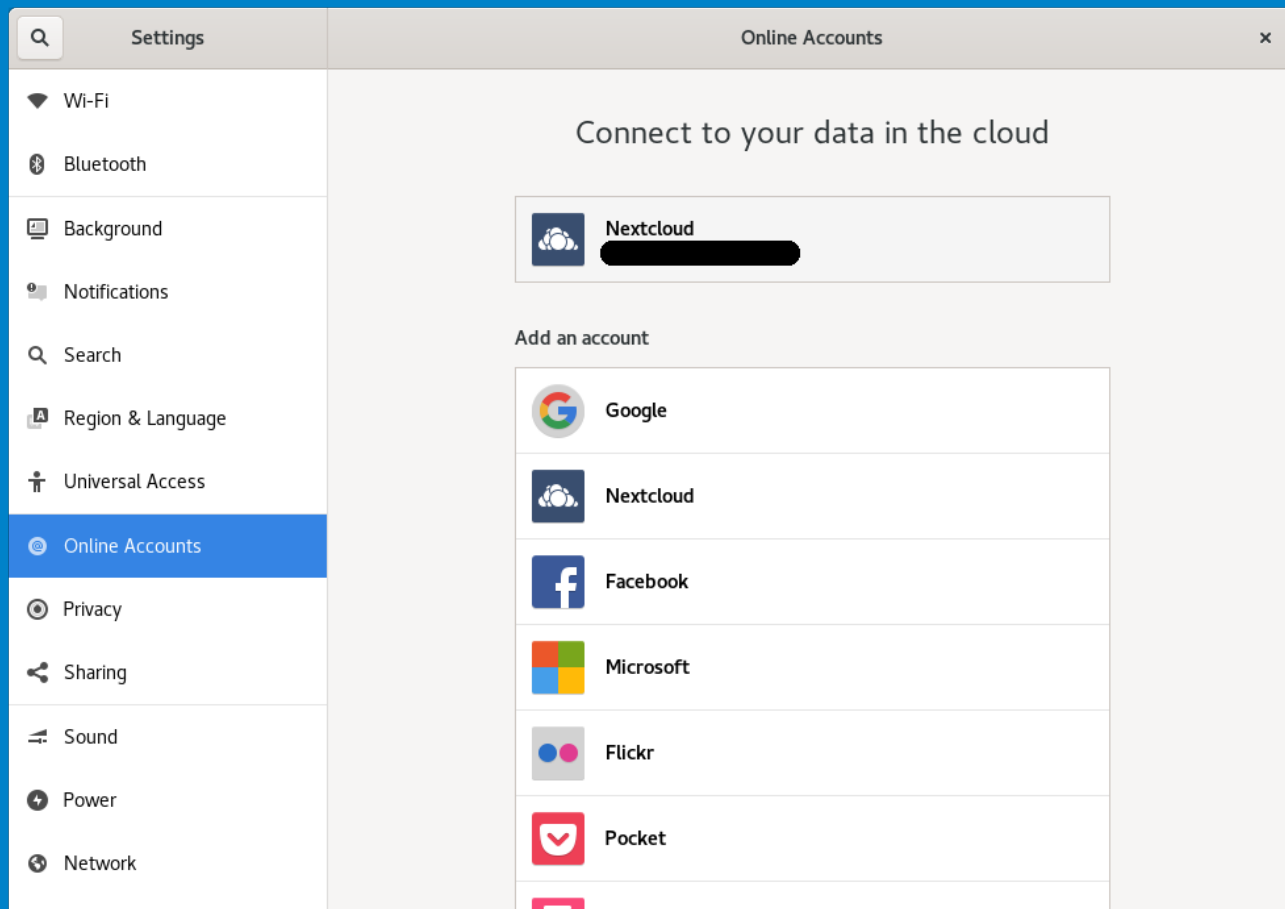
```
maintenance:repair      repair this installation
maintenance:theme:update Apply custom theme changes
maintenance:update:htaccess Updates the .htaccess file
migrations
migrations:execute      Execute a single migration version manually.
migrations:generate
migrations:generate-from-schema Execute a migration to a specified version or the latest available version.
migrations:migrate      View the status of a set of migrations.
migrations:status
notification
notification:generate    Generate a notification for the given user
passwords
passwords:backup:create Create a new backup of the password database
passwords:backup:list   Print a list of the available backups
passwords:backup:restore Restores a backup
security
security:certificates   list trusted certificates
security:certificates:import import trusted certificate
security:certificates:remove remove trusted certificate
sharing
sharing:cleanup-remote-storages Cleanup shared storage entries that have no matching entry in the shares_external table
talk
talk:signaling:add      Add an external signaling server.
talk:signaling:delete   Remove an existing signaling server.
talk:signaling:list     List external signaling servers.
talk:stun:add           Add a new STUN server.
talk:stun:delete        Remove an existing STUN server.
talk:stun:list          List STUN servers.
talk:turn:add           Add a TURN server.
talk:turn:delete        Remove an existing TURN server.
talk:turn:list          List TURN servers.
trashbin
trashbin:cleanup        Remove deleted files
trashbin:expire         Expires the users trashbin
twofactorauth
twofactorauth:cleanup  Clean up the two-factor user-provider association of an uninstalled/removed provider
twofactorauth:disable Disable two-factor authentication for a user
twofactorauth:enable   Enable two-factor authentication for a user
twofactorauth:enforce  Enabled/disable enforced two-factor authentication
twofactorauth:state    Get the two-factor authentication (2FA) state of a user
user
user:add               adds a user
user:delete           deletes the specified user
user:disable          disables the specified user
user:enable           enables the specified user
user:info             show user info
user:lastseen         shows when the user was logged in last time
user:list             list configured users
user:report           shows how many users have access
user:resetpassword    Resets the password of the named user
user:setting          Read and modify user settings
versions
versions:cleanup      Delete versions
versions:expire       Expires the users file versions
mysqserver:~ #
```

Integration

- **GNOME online accounts** (most desktop Linux setups)
- **Android** (also iOS) apps
- **Linux** (also Windows, and macOS) desktop app

The integrations and service of Nextcloud provides convenience using Free Software

GNOME Online Accounts integration



Desktop app (1/2)

The image shows two side-by-side windows from the Nextcloud desktop application. The left window is the 'Nextcloud' settings panel, and the right window is the 'Nextcloud Connection Wizard'.

Nextcloud Settings Window:

- General Settings:**
 - Launch on System Startup
 - Show Server Notifications
 - Use Monochrome Icons
- Advanced:**
 - Edit Ignored Files
 - Ask for confirmation before synchronizing folders larger than 500 MB
 - Ask for confirmation before synchronizing external storages
- About:**
 - Version 2.5.1 final (build 20181204). For more information please visit nextcloud.com.
 - This release was supplied by Nextcloud GmbH
 - Built from Git revision [b37cbe](#) on Dec 4 2018, 11:48:13 using Qt 5.11.0, OpenSSL 1.0.2g 1 Mar 2016
 - [Legal notice](#)
- Updates:**
 - No updates available. Your installation is at the latest version.


Nextcloud Connection Wizard Window:


- Connect to Nextcloud**
Setup Nextcloud server
- Easy-to-use web mail, calendaring & contacts
- Server Address:
- [Register with a provider](#)
- [Host your own server](#)
- [Next >](#)

Desktop app (2/2)

Nextcloud Connection Wizard

Connect to Nextcloud
Setup local folder options





Server

Sync everything from server (585 MB)

Ask for confirmation before synchronizing folders larger than 500 MB

Ask for confirmation before synchronizing external storages

Choose what to sync


Local Folder

/home/[redacted]/Nextcloud

Skip folders configuration < Back Connect...

The components

**Apache2/httpd
Or
Nginx**

MySQL

Redis

PHP

Great for scaling – modular

Some ways* of server installation

- **[Involved]** Via a plain webserver – installation via archive or PHP based installer (Requires installed: Apache2/httpd or Nginx, mysql/mariadb, php, etc...)
- **[Easy]** Inside a Docker container (using the official image; includes dependencies; uses a Debian basesystem; great for scaling)
- **[Easy]** As a snap package (via snapcraft.io; auto-updating; My recommendation)

*Due to Nextcloud's flexibility, here are only a few ways of installation

DEMO

Cloud storage ain't all bad

Just make sure you self-host
or
find a good provider

Give Nextcloud a go and convenience your life with Free Software!

Links/references

- nextcloud.com
- nextcloud.com/install
- github.com/nextcloud
- github.com/nextcloud/nextcloud-snap
- nextcloud.com/blog/the-issue-with-public-cloud
- github.com/nextcloud/docker
- ownyourbits.com/nextcloudpi
- gitlab.com/BobyMCbobs/ansible-nextcloud-setup
- docs.nethserver.org/projects/nethserver-devel/en/latest/nethserver-nextcloud.html