



Nextcloud User Manual¹

Release latest

The Nextcloud developers²

Sep 09, 2021

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CHAPTER 1¹

Nextcloud latest user manual introduction²

Welcome to Nextcloud: A safe home for all your data.³

Nextcloud is open source file sync and share software for everyone from individuals operating the free Nextcloud Server in the privacy of their own home, to large enterprises and service providers supported by the Nextcloud Enterprise Subscription. Nextcloud provides a safe, secure, and compliant file synchronization and sharing solution on servers that you control.

You can share one or more files and folders on your computer, and synchronize them with your Nextcloud server. Place files in your local shared directories, and those files are immediately synchronized to the server and to other devices using the Nextcloud Desktop Sync Client, Android app, or iOS app. To learn more about the Nextcloud desktop and mobile clients, please refer to their respective manuals:

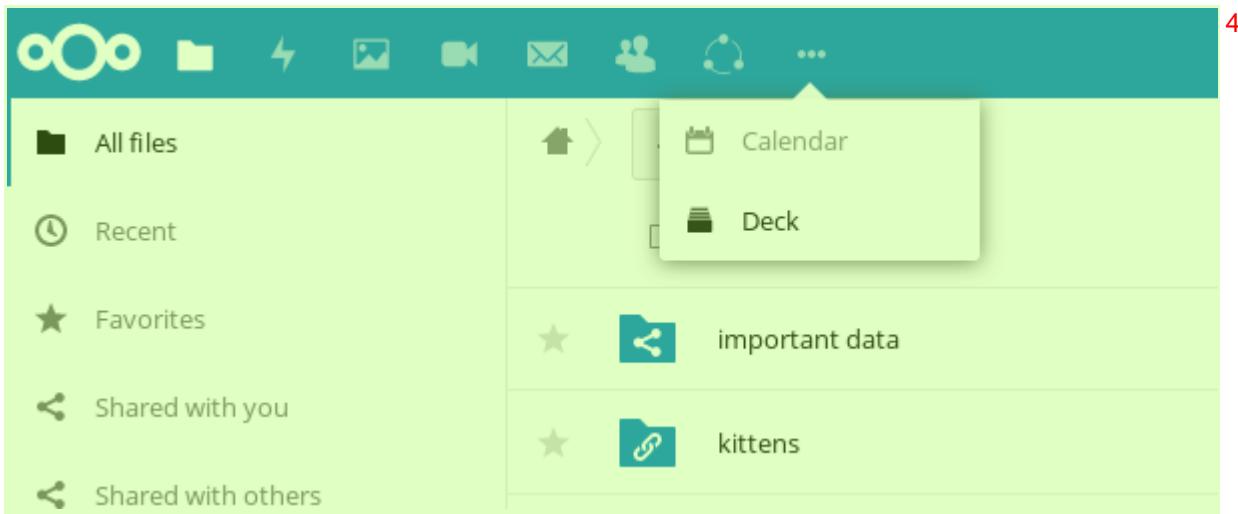
- Nextcloud Desktop Client⁶
- Nextcloud Android App

Help translate.⁷

CHAPTER 2¹

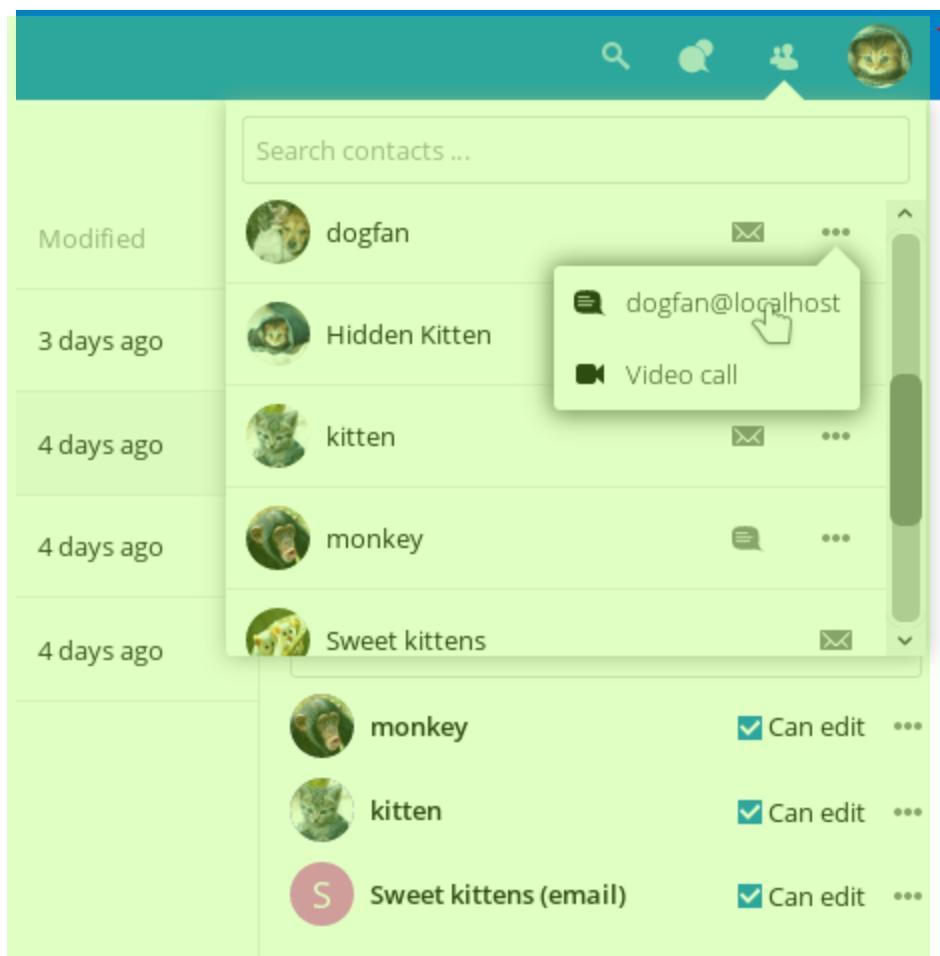
What's new for users in Nextcloud latest²

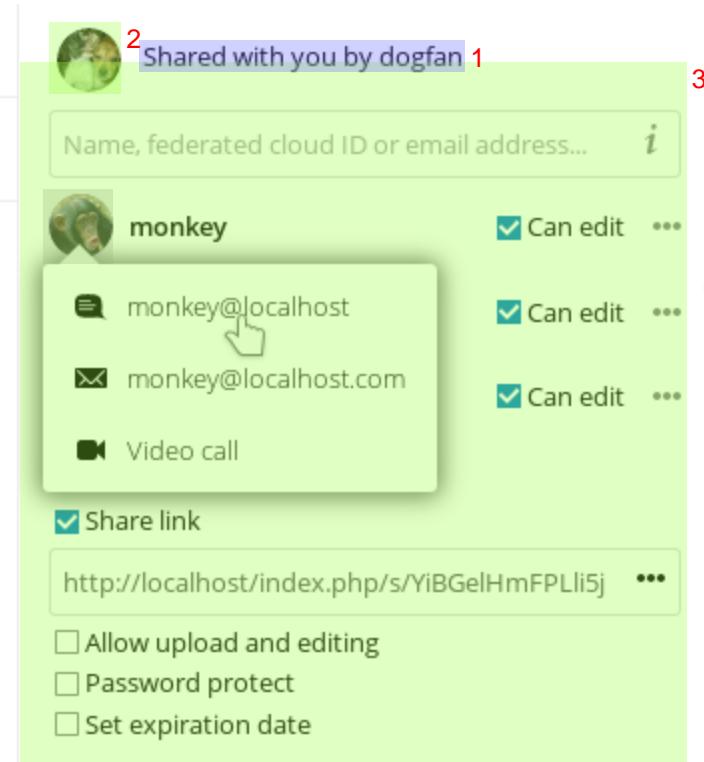
1. Easier way to select a new app: ³3

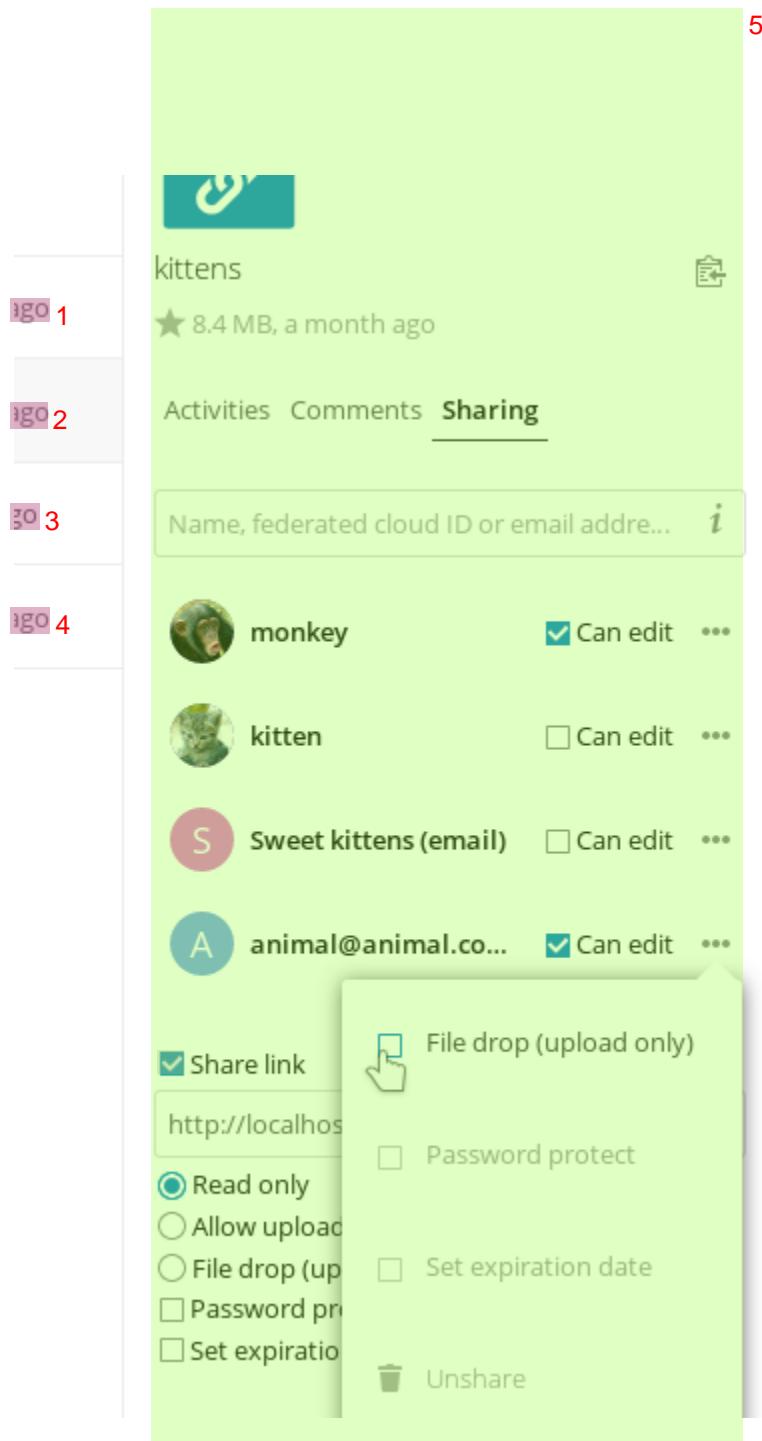


2. New Contacts menu to reach your colleagues or friends easier: ⁵5

3. A contact popup menu over avatars everywhere: ⁶6
4. Ability to send multiple unique sharing links each with their own settings, by entering email addresses (the recipient will receive an email):
5. Many other improvements and new apps, like screensharing in Video calls, new Circles app for user defined groups, push notifications, notifications of file changes even when shared to another server, undo removal of files from a shared folder even if the removal was done by a recipient, directly sharing to social media and much more.



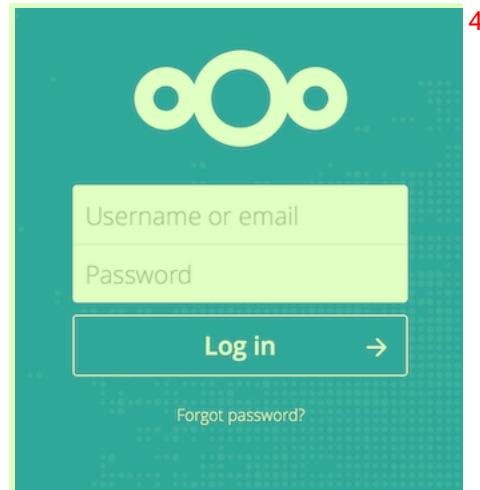




CHAPTER 3¹

The Nextcloud Web interface²

You can connect to your Nextcloud server using any Web browser. Just point it to your Nextcloud server URL (e.g.³ cloud.example.com) and enter your username and password:



3.1 Web browser requirements⁵

For the best experience with the Nextcloud web interface, we recommend that you use the latest and supported version⁶ of a browser from this list:

- Microsoft Internet Explorer⁷
- Microsoft Edge
- Mozilla Firefox
- Google Chrome/Chromium

- Apple Safari 1

Note: If you want to use Nextcloud Talk you need to run Mozilla **Firefox 52+** or Google **Chrome/Chromium 49+** to have the full experience with video calls and screensharing. Google **Chrome/Chromium** requires a additional plugin for screensharing. 2

3.2 Navigating the main user interface 3

By default, the Nextcloud Web interface opens to your Dashboard or Files page: 4



In Files you can add, remove, and share files, and make changes based on the access privileges set by you (if you are 6 administering the server) or by your server administrator. 6

The Nextcloud user interface contains the following fields and functions: 7

- **Apps Selection Menu (1):** Located in the upper left corner, you'll find all your apps which are available on your instance of Nextcloud. Clicking on an apps icon will redirect you to the app.
- **Apps Information field (2):** Located in the left sidebar, this provides filters and tasks associated with your selected app. For example, when you are using the Files apps you have a special set of filters for quickly finding your files, such as files that have been shared with you, and files that you have shared with others. You'll see different items for other apps.
- **Application View (3):** The main central field in the Nextcloud user interface. This field displays the contents or user features of your selected app.
- **Navigation Bar (4):** Located over the main viewing window (the Application View), this bar provides a type of breadcrumbs navigation that enables you to migrate to higher levels of the folder hierarchy up to the root level (home).
- **New button (5):** Located in the Navigation Bar, the New button enables you to create new files, new folders, or upload files.

Note: You can also drag and drop files from your file manager into the Files Application View to upload them to your instance.¹

- **Search field** (6): Click on the Magnifier in the upper right corner to search for files and entries of the current app.²
- **Contacts Menu** (7): Gives you an overview about your contacts and users on your server. Dependent on the given details and available apps, you can directly start a video call with them or send emails.³
- **Grid view button** (8): This looks like four little squares, which toggles the grid view for folders and files.⁴
- **Settings menu** (9): Click on your profile picture, located to the right of the Search field, to open your Settings dropdown menu. Your Settings page provides the following settings and features:⁵

- Links to download desktop and mobile apps⁶
- Server usage and space availability
- Password management
- Name, email, and profile picture settings
- Manage connected browsers and devices
- Group memberships
- Interface language settings
- Manage notifications
- Federated Cloud ID and social media-sharing buttons
- SSL/TLS certificate manager for external storages
- Your Two-factor Settings
- Nextcloud Version information

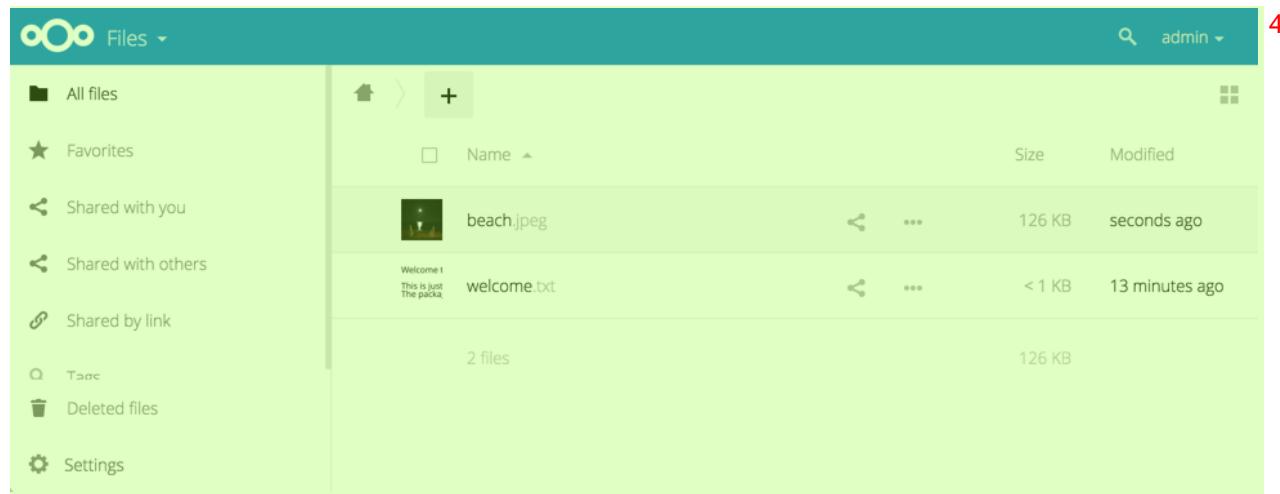
See *Setting your preferences* section to learn more about these settings.⁷

CHAPTER 4

Files & synchronization¹

4.1 Accessing your files using the Nextcloud Web interface²

You can access your Nextcloud files with the Nextcloud Web interface and create, preview, edit, delete, share, and re-share files. Your Nextcloud administrator has the option to disable these features, so if any of them are missing on your system ask your server administrator.³

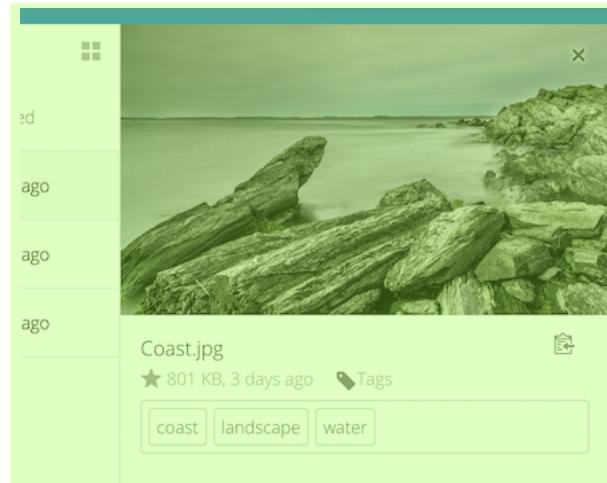


The screenshot shows the Nextcloud Web interface. The top navigation bar includes the Nextcloud logo, a 'Files' dropdown, a search icon, and the user 'admin'. The sidebar on the left contains links for 'All files', 'Favorites', 'Shared with you', 'Shared with others', 'Shared by link', 'Tags', 'Deleted files', and 'Settings'. The main area displays a list of files with columns for Name, Size, and Modified. Two files are listed: 'beach.jpeg' (126 KB, modified 'seconds ago') and 'welcome.txt' (less than 1 KB, modified '13 minutes ago'). A summary at the bottom indicates 2 files with a total size of 126 KB.

4.1.1 Tagging files⁵

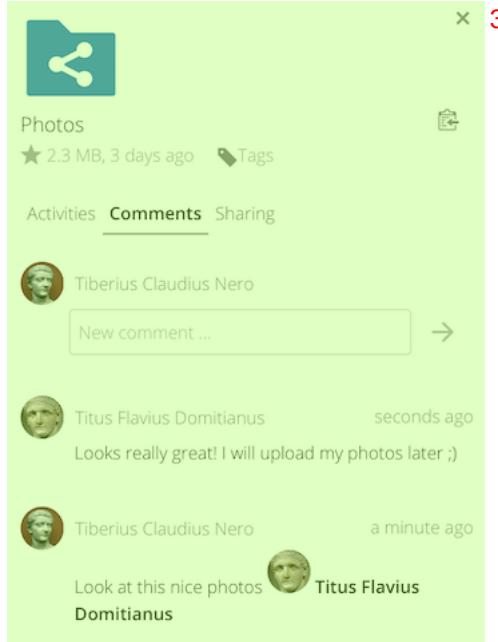
You can assign tags to files. To create tags, open a file to the Details view. Then type your tags. To enter more than one tag press the return key after creating each tag. All tags are system tags, and are shared by all users on your Nextcloud server.⁶

Then use the Tags filter on the left sidebar to filter files by tags:⁷



4.1.2 Comments ¹

Use the Details view to add and read comments on any file or folder. Comments are visible to everyone who has access ² to the file:



4.1.3 Video player ⁴

You can play videos in Nextcloud with the Video Player app by simply clicking on the file. Video streaming ⁵ by the native Nextcloud video player depends on your Web browser and the video format. If your Nextcloud administrator has enabled video streaming, and it doesn't work in your Web browser, it may be a browser issue. See https://developer.mozilla.org/en-US/docs/Web/HTML/Supported_media_formats#Browser_compatibility for supported multimedia formats in Web browsers.

4.1.4 File controls ⁶

Nextcloud can display thumbnail previews for image files, MP3 covers, and text files, if this enabled by your server ⁷ administrator. Hover your cursor over a file or folder to expose the controls for the following operations:

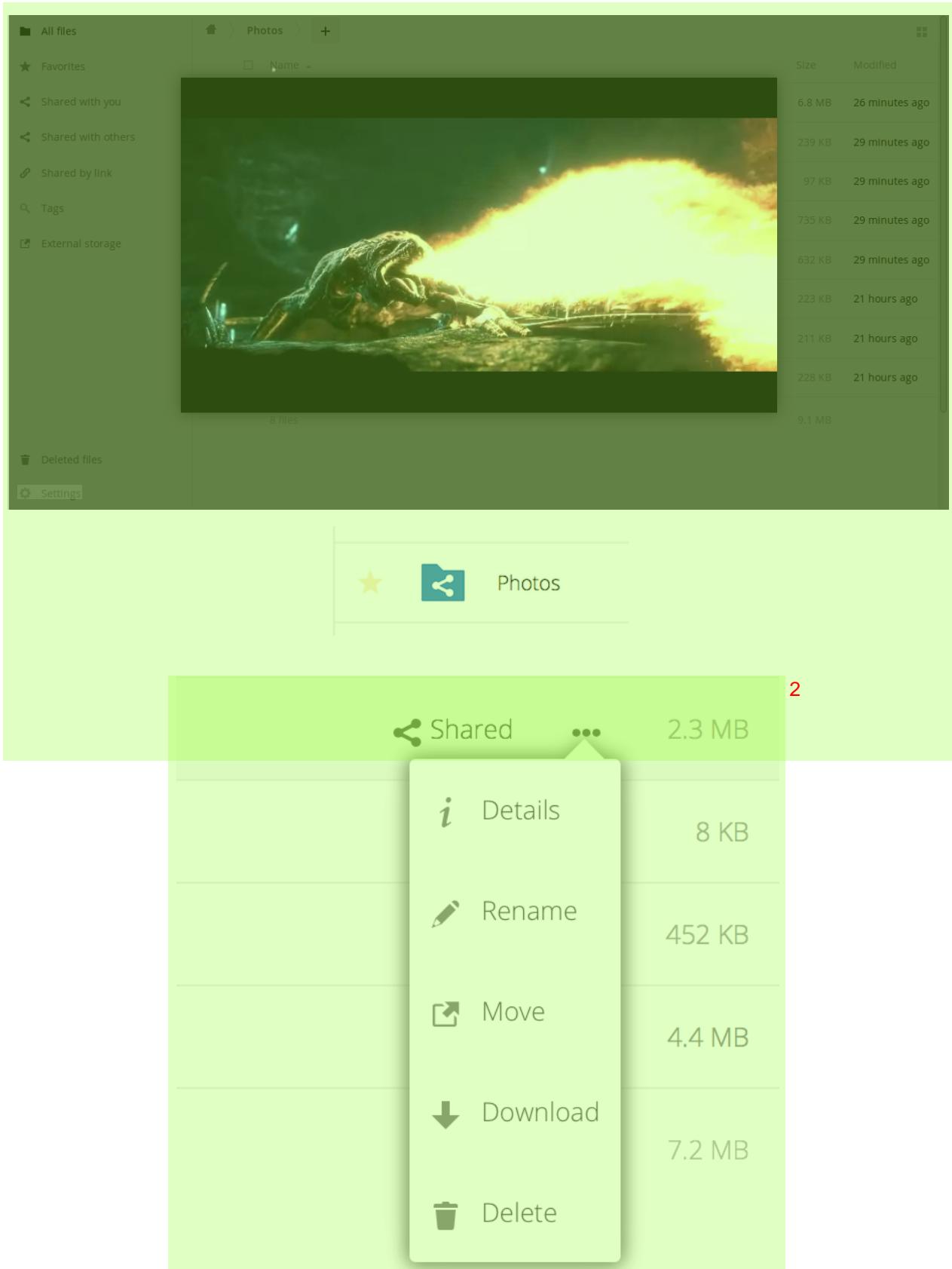
Favorites Click the star to the left of the file icon to mark it as a favorite: ⁸

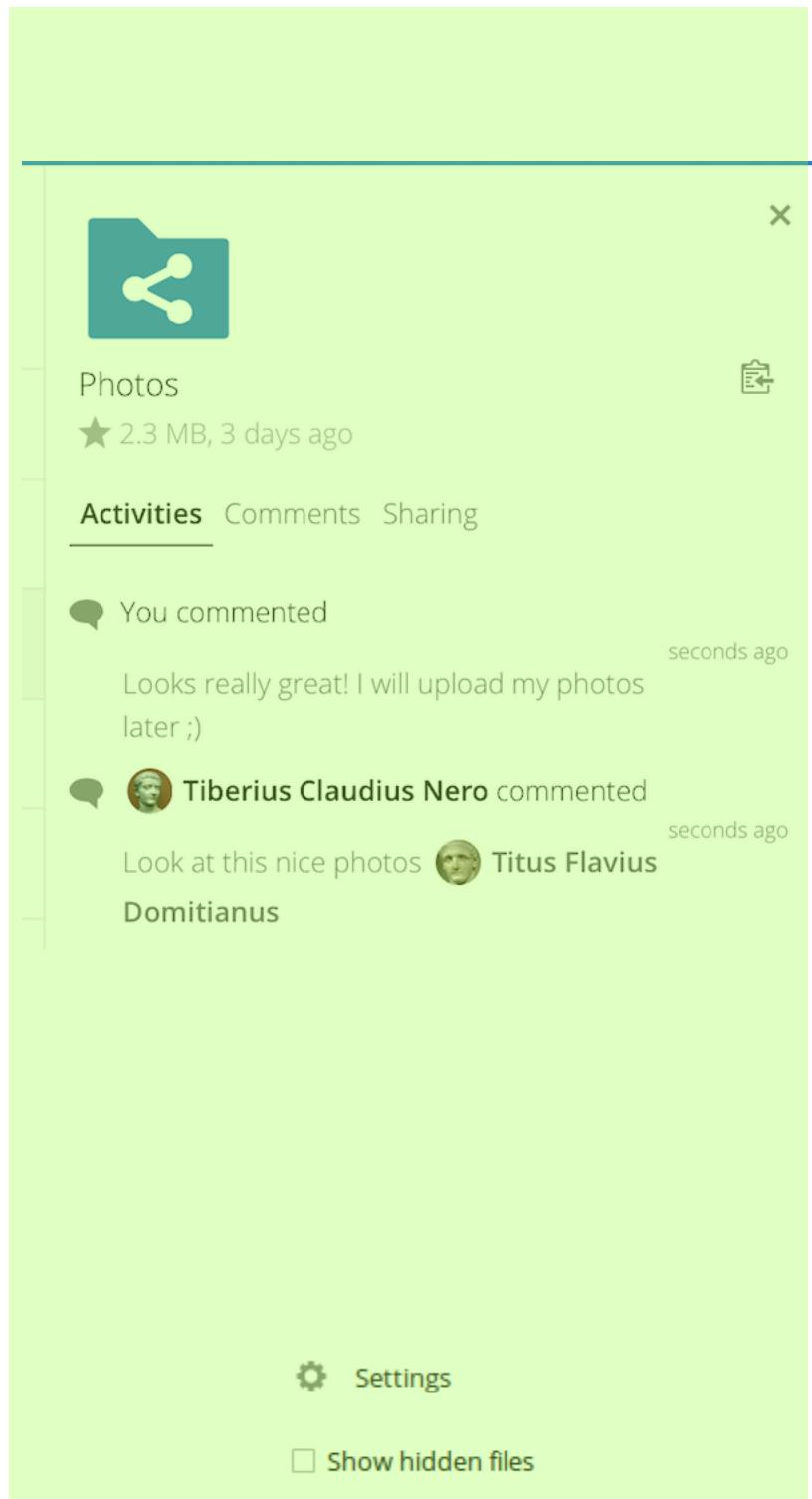
You can also quickly find all of your favorites with the Favorites filter on the left sidebar. ⁹

Overflow Menu The Overflow menu (three dots) displays file details, and allows you to rename, download, or delete ¹⁰ files:

The Details view shows Activities, Sharing, and Versions information: ¹¹

The **Settings** gear icon at the lower left allows you to show or hide hidden files in your Nextcloud Web interface. ¹² These are also called dotfiles, because they are prefixed with a dot, e.g. `.mailfile`. The dot tells your operating system to hide these files in your file browsers, unless you choose to display them. Usually these are configuration files, so having the option to hide them reduces clutter.





4.1.5 Previewing files ¹

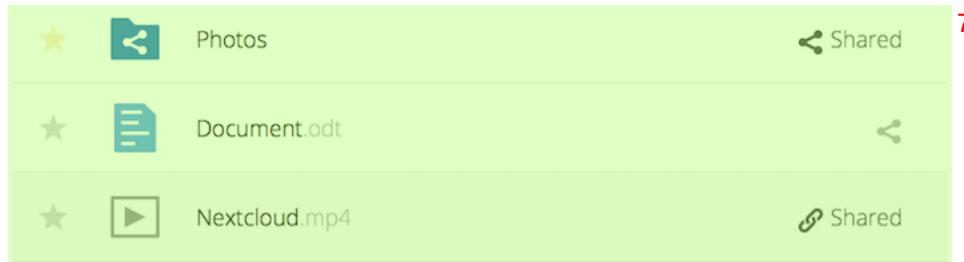
You can display uncompressed text files, OpenDocument files, videos, and image files in the Nextcloud embedded viewers by clicking on the file name. There may be other file types you can preview if your Nextcloud administrator has enabled them. If Nextcloud cannot display a file, it starts a download process and downloads the file to your computer.

4.1.6 Navigating inside your Nextcloud ³

Navigating through folders in Nextcloud is as simple as clicking on a folder to open it and using the back button on ⁴ your browser to move to a previous level. Nextcloud also provides a navigation bar at the top of the Files field for quick navigation.

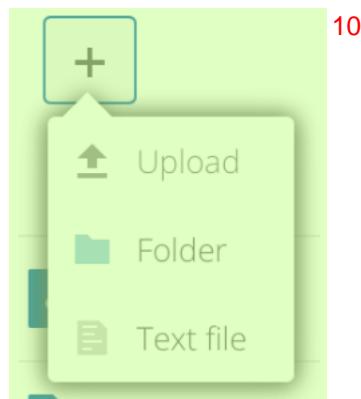
4.1.7 Sharing status icons ⁵

Any folder that has been shared is marked with the Shared overlay icon. Public link shares are marked with a chain ⁶ link. Unshared folders are not marked:



4.1.8 Creating or uploading files and directories ⁸

Upload or create new files or folders directly in a Nextcloud folder by clicking on the *New* button in the Files app: ⁹



The *New* button provides the following options: ¹¹

Up arrow Upload files from your computer into Nextcloud. You can also upload files by dragging and dropping them ¹² from your file manager.

Text file Creates a new text file and adds the file to your current folder. ¹³

Folder Creates a new folder in the current folder.¹

4.1.9 Selecting files or folders²

You can select one or more files or folders by clicking on their checkboxes. To select all files in the current directory,³ click on the checkbox located at the top of the files listing.

When you select multiple files, you can delete all of them, or download them as a ZIP file by using the Delete or⁴ Download buttons that appear at the top.

Note: If the Download button is not visible, the administrator has disabled this feature.⁵

4.1.10 Filtering the files view⁶

The left sidebar on the Files page contains several filters for quickly sorting and managing your files.⁷

All files The default view; displays all files that you have access to.⁸

Favorites Files or folders marked with the yellow star.⁹

Shared with you Displays all files shared with you by another user or group.¹⁰

Shared with others Displays all files that you have shared with other users or groups.¹¹

Shared by link Displays all files that are shared by you via public link.¹²

External Storage (optional) Files that you have access to on external storage devices and services such as Amazon¹³ S3, SMB/CIFS, FTP…

4.1.11 Moving files¹⁴

You can move files and folders by dragging and dropping them into any directory.¹⁵

4.1.12 Creating or connecting to a Federation Share link¹⁶

Federated Cloud Sharing allows you to mount file shares from remote Nextcloud servers, and manage them just like a¹⁷ local share. See *Using Federation Shares* to learn how to create and connect to new Federated Cloud shares.

4.2 Accessing Nextcloud files using WebDAV¹⁸

Nextcloud fully supports the WebDAV protocol, and you can connect and synchronize with your Nextcloud files¹⁹ over WebDAV. In this chapter you will learn how to connect Linux, macOS, Windows, and mobile devices to your Nextcloud server via WebDAV. Before we get into configuring WebDAV, let's take a quick look at the recommended way of connecting client devices to your Nextcloud servers.

Note: In the following examples, you should replace **example.com/nextcloud** with the URL of your Nextcloud²⁰ server (omit the directory part if the installation is in the root of your domain), and “USERNAME” with the username of the connecting user.

See the WebDAV URL (bottom left in settings) on your Nextcloud.²¹

Note: In the following examples, you must use an app-password for login, which you can generate in your security¹ settings.

4.2.1 Nextcloud Desktop and mobile clients²

The recommended way to synchronize a desktop PC with a Nextcloud server is by using Nextcloud/ownCloud sync³ clients. You can configure the client to save files in any local directory and you can choose which directories on the Nextcloud server to sync with. The client displays the current connection status and logs all activity, so you always know which remote files have been downloaded to your PC and you can verify that files created and updated on your local PC are properly synchronized with the server.

The recommended way to synchronize Nextcloud server with Android and Apple iOS devices is by using the mobile⁴ apps.

To connect your mobile app to a Nextcloud server use the base URL and folder only:⁵

```
example.com/nextcloud
```

In addition to the mobile apps provided by Nextcloud or ownCloud, you can use other apps to connect to Nextcloud⁶ from your mobile device using WebDAV. WebDAV Navigator is a good (proprietary) app for Android devices and iPhones. The URL to use on these is:

```
example.com/nextcloud/remote.php/dav/files/USERNAME/
```

⁷

4.2.2 WebDAV configuration⁸

If you prefer, you may also connect your desktop PC to your Nextcloud server by using the WebDAV protocol rather⁹ than using a special client application. Web Distributed Authoring and Versioning (WebDAV) is a Hypertext Transfer Protocol (HTTP) extension that makes it easy to create, read, and edit files on Web servers. With WebDAV you can access your Nextcloud shares on Linux, macOS and Windows in the same way as any remote network share, and stay synchronized.

4.2.3 Accessing files using Linux¹⁰

You can access files in Linux operating systems using the following methods.¹¹

Nautilus file manager¹²

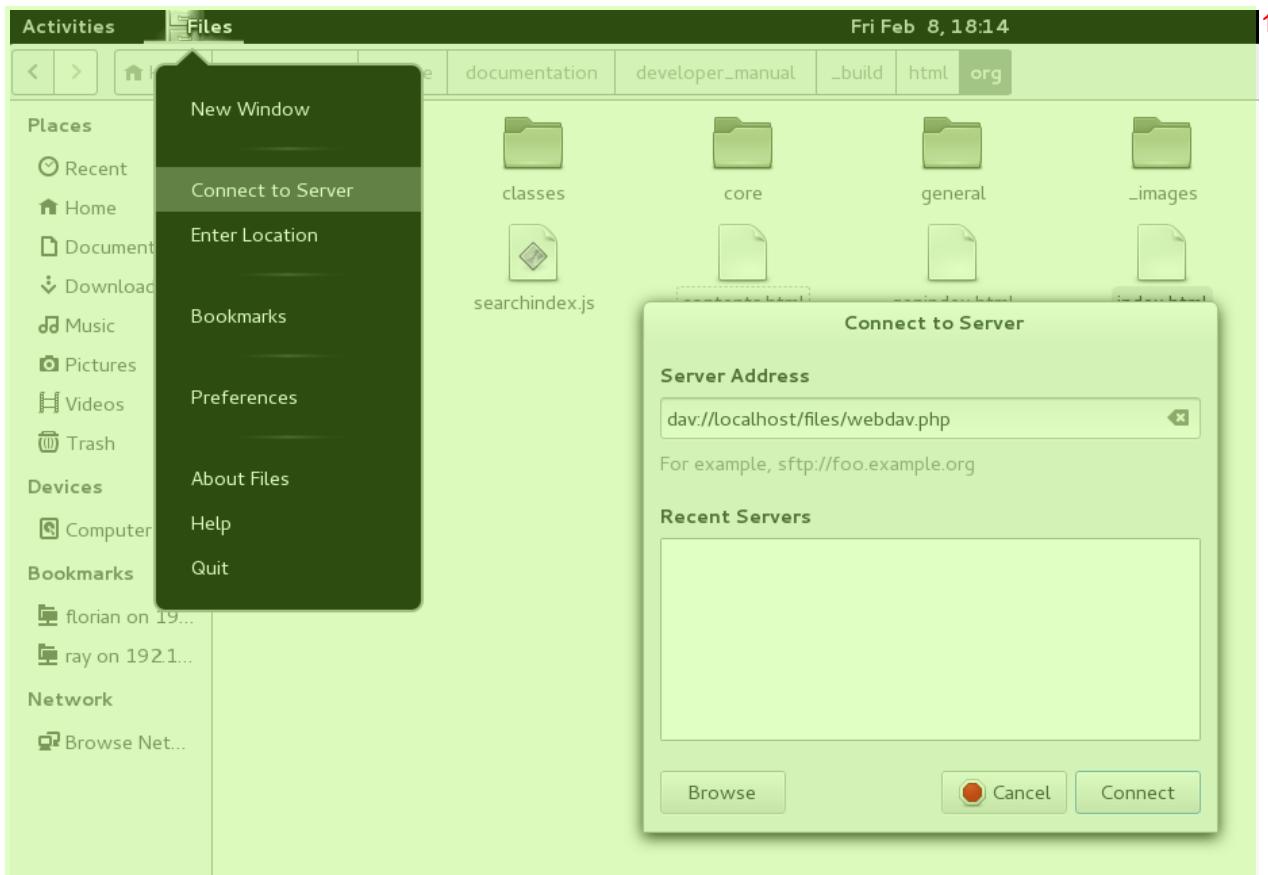
When you configure your Nextcloud account in the GNOME Control Center, your files will automatically be¹³ mounted by Nautilus as a WebDAV share, unless you deselect file access.

You can also mount your Nextcloud files manually. Use the `davs://` protocol to connect the Nautilus file manager¹⁴ to your Nextcloud share:

```
davs://example.com/nextcloud/remote.php/dav/files/USERNAME/
```

¹⁵

Note: If your server connection is not HTTPS-secured, use `dav://` instead of `davs://`.¹⁶

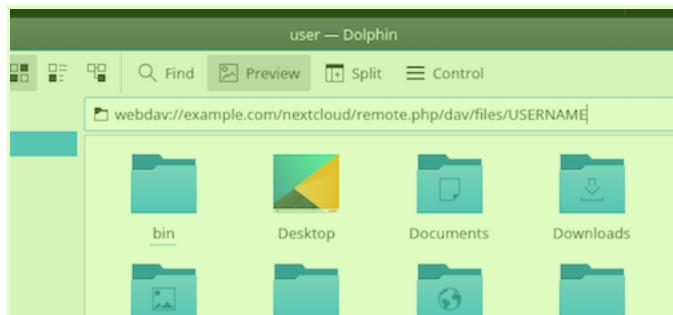


Note: The same method works for other file managers that use GVfs, such as MATE's Caja and Cinnamon's Nepomuk.²

Accessing files with KDE and Dolphin file manager³

To access your Nextcloud files using the Dolphin file manager in KDE, use the `webdav://` protocol.⁴

```
webdav://example.com/nextcloud/remote.php/dav/files/USERNAME/
```



You can create a permanent link to your Nextcloud server:⁷

1. Open Dolphin and click “Network” in the left hand “Places” column.
2. Click on the icon labeled **Add a Network Folder**. The resulting dialog should appear with WebDAV already selected.

3. If WebDAV is not selected, select it. 2

4. Click **Next**. 3

5. Enter the following settings: 4

- Name: The name you want to see in the **Places** bookmark, for example Nextcloud. 5
- User: The Nextcloud username you used to log in, for example admin.
- Server: The Nextcloud domain name, for example **example.com** (without **http://** before or directories afterwards).
- Folder – Enter the path `nextcloud/remote.php/dav/files/USERNAME/`.

6. (Optional) Check the “Create icon” checkbox for a bookmark to appear in the Places column. 6

7. (Optional) Provide any special settings or an SSL certificate in the “Port & Encrypted” checkbox. 7

4.2.4 Creating WebDAV mounts on the Linux command line 8

You can create WebDAV mounts from the Linux command line. This is useful if you prefer to access Nextcloud the same way as any other remote filesystem mount. The following example shows how to create a personal mount and have it mounted automatically every time you log in to your Linux computer. 9

1. Install the `davfs2` WebDAV filesystem driver, which allows you to mount WebDAV shares just like any other remote filesystem. Use this command to install it on Debian/Ubuntu: 10

```
apt-get install davfs2
```

2. Use this command to install it on CentOS, Fedora, and openSUSE: 11

```
yum install davfs2
```

3. Add yourself to the `davfs2` group: 13

```
usermod -aG davfs2 <username>
```

3. Then create a `nextcloud` directory in your home directory for the mountpoint, and `.davfs2/` for your personal configuration file:

```
mkdir ~/nextcloud
mkdir ~/.davfs2
```

4. Copy `/etc/davfs2/secrets` to `~/.davfs2/`:

```
cp /etc/davfs2/secrets ~/.davfs2/secrets
```

5. Set yourself as the owner and make the permissions read-write owner only:

```
chown <linux_username>:<linux_username> ~/.davfs2/secrets
chmod 600 ~/.davfs2/secrets
```

6. Add your Nextcloud login credentials to the end of the `secrets` file, using your Nextcloud server URL and your Nextcloud username and password:

```
https://example.com/nextcloud/remote.php/dav/files/USERNAME/ <username> <password>
or
$PathToMountPoint $USERNAME $PASSWORD
```

for example
`/home/user/nextcloud john 1234`

1

7. Add the mount information to `/etc/fstab`: 2

```
https://example.com/nextcloud/remote.php/dav/files/USERNAME/ /home/<linux_
˓→username>/nextcloud
davfs user,rw,auto 0 0
```

8. Then test that it mounts and authenticates by running the following command. If you set it up correctly you 4 won't need root permissions:

```
mount ~/nextcloud
```

9. You should also be able to unmount it: 5

```
umount ~/nextcloud
```

Now every time you login to your Linux system your Nextcloud share should automatically mount via WebDAV in 6 your `~/nextcloud` directory. If you prefer to mount it manually, change `auto` to `noauto` in `/etc/fstab`.

4.2.5 Known issues 7

Problem 8

Resource temporarily unavailable 9

Solution 10

If you experience trouble when you create a file in the directory, edit `/etc/davfs2/davfs2.conf` and add: 11

```
use_locks 0
```

Problem

Certificate warnings

Solution

If you use a self-signed certificate, you will get a warning. To change this, you need to configure `davfs2` to recognize your certificate. Copy `mycertificate.pem` to `/etc/davfs2/certs/`. Then edit `/etc/davfs2/davfs2.conf` and uncomment the line `servercert`. Now add the path of your certificate as in this example:

```
servercert /etc/davfs2/certs/mycertificate.pem
```

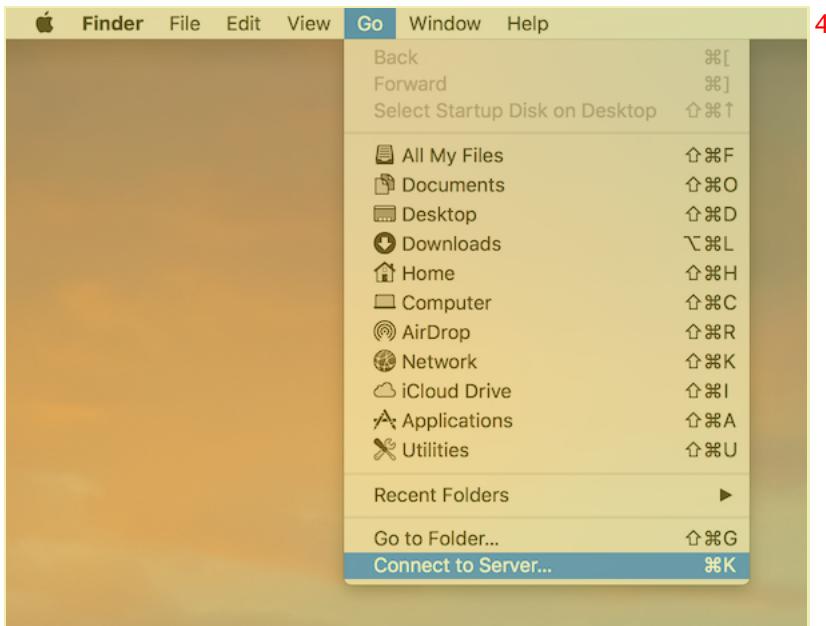
4.2.6 Accessing files using macOS

Note: The macOS Finder suffers from a series of implementation problems and should only be used if the Nextcloud server runs on Apache and mod_php, or Nginx 1.3.8+. Alternative macOS-compatible clients capable of accessing

WebDAV shares include open source apps like Cyberduck (see instructions here) and Filezilla. Commercial clients include Mountain Duck, Forklift, Transmit, and Commander One. 1

To access files through the macOS Finder: 2

- From the Finder's top menu bar, choose **Go > Connect to Server...**: 3



- When the **Connect to Server...** window opens, enter your Nextcloud server's WebDAV address in the **Server Address:** field, i.e.: 5

`https://cloud.YOURDOMAIN.com/remote.php/dav/files/USERNAME/` 6



- Click **Connect**. Your WebDAV server should appear on the Desktop as a shared disk drive. 8

4.2.7 Accessing files using Microsoft Windows 9

If you use the native Windows implementation of WebDAV, you can map Nextcloud to a new drive using Windows Explorer. Mapping to a drive enables you to browse files stored on a Nextcloud server the way you would files stored in a mapped network drive. 10

Using this feature requires network connectivity. If you want to store your files offline, use the Desktop Client to sync all files on your Nextcloud to one or more directories of your local hard drive. 11

Note: Windows 10 now defaults to allow Basic Authentication if HTTPS is enabled prior to mapping your drive. On older versions of Windows, you must permit the use of Basic Authentication in the Windows Registry: launch regedit and navigate to HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\WebClient\Parameters. Create or edit the DWORD value BasicAuthLevel (Windows Vista, 7 and 8) or UseBasicAuth (Windows XP and Windows Server 2003) and set its value data to 1 for SSL connections. Value 0 means that Basic Authentication is disabled, a value of 2 allows both SSL and non-SSL connections (not recommended). Then exit Registry Editor, and restart the computer.

Mapping drives with the command line 2

The following example shows how to map a drive using the command line. To map the drive:

1. Open a command prompt in Windows. 4
2. Enter the following line in the command prompt to map to the computer Z drive: 5

```
net use Z: https://<drive_path>/remote.php/dav/files/USERNAME/ /user:youruser  
yourpassword 6
```

where <drive_path> is the URL to your Nextcloud server. 7

For example: net use Z: https://example.com/nextcloud/remote.php/dav/files/ 8
USERNAME/ /user:youruser yourpassword

The computer maps the files of your Nextcloud account to the drive letter Z. 9

Note: Though not recommended, you can also mount the Nextcloud server using HTTP, leaving the connection unencrypted. If you plan to use HTTP connections on devices while in a public place, we strongly recommend using a VPN tunnel to provide the necessary security. 10

An alternative command syntax is: 11

```
net use Z: \\\example.com@ssl\nextcloud\remote.php\dav /user:youruser 12  
yourpassword
```

Mapping drives with Windows Explorer 13

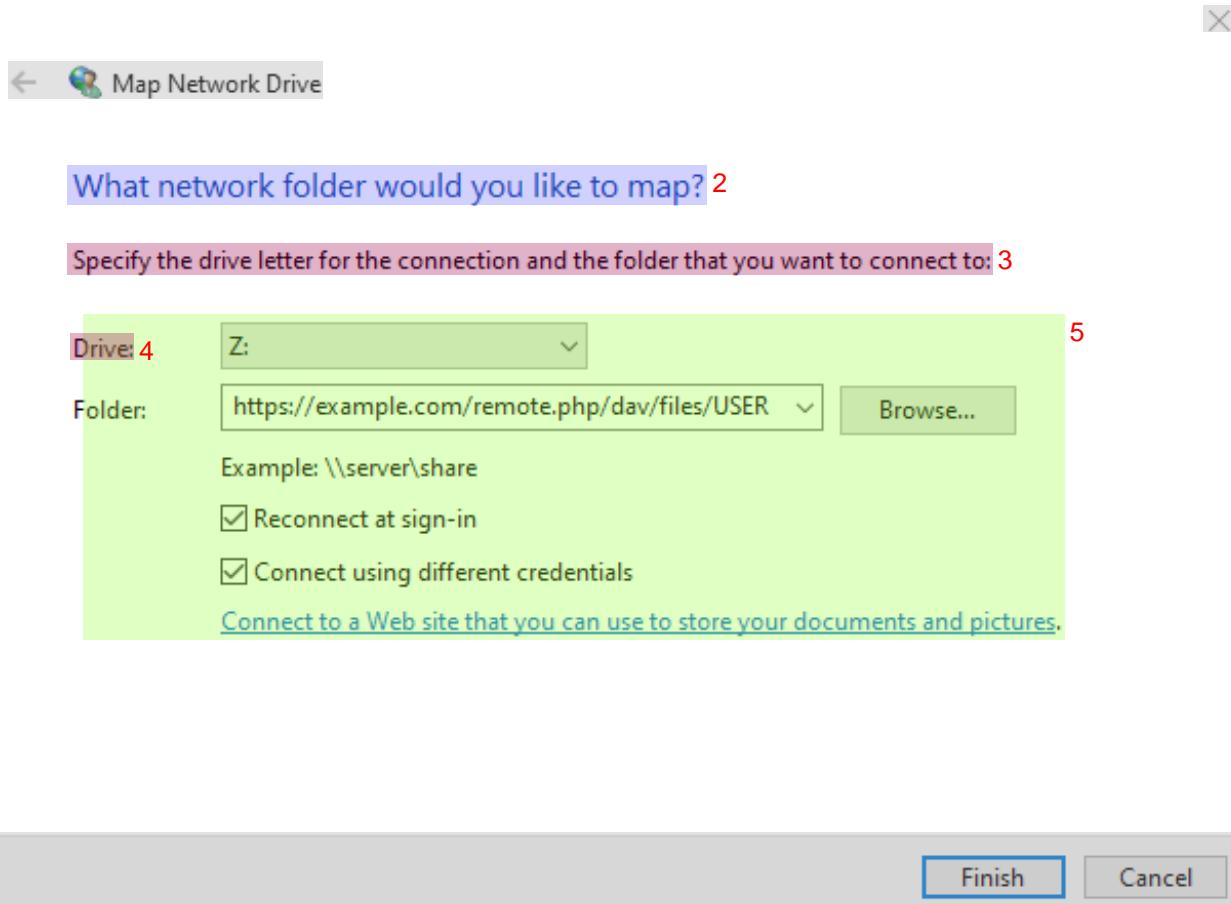
To map a drive using the Microsoft Windows Explorer: 14

1. Migrate to your computer in Windows Explorer. 15
2. Right-click on **Computer** entry and select **Map network drive...** from the drop-down menu.
3. Choose a local network drive to which you want to map Nextcloud.
4. Specify the address to your Nextcloud instance, followed by **/remote.php/dav/files/USERNAME/**.

For example:

```
https://example.com/nextcloud/remote.php/dav/files/USERNAME/ 16
```

Note: For SSL protected servers, check **Reconnect at sign-in** to ensure that the mapping is persistent upon subsequent reboots. If you want to connect to the Nextcloud server as a different user, check **Connect using different credentials**.



5. Click the **Finish** button.

Windows Explorer maps the network drive, making your Nextcloud instance available.

4.2.8 Accessing files using Cyberduck

Cyberduck is an open source FTP and SFTP, WebDAV, OpenStack Swift, and Amazon S3 browser designed for file transfers on macOS and Windows.

Note: This example uses Cyberduck version 4.2.1.

To use Cyberduck:

1. Specify a server without any leading protocol information. For example:
example.com
2. Specify the appropriate port. The port you choose depends on whether or not your Nextcloud server supports SSL. Cyberduck requires that you select a different connection type if you plan to use SSL. For example:

80 (for WebDAV) 1

443 (for WebDAV (HTTPS/SSL))

3. Use the ‘More Options’ drop-down menu to add the rest of your WebDAV URL into the ‘Path’ field. For example:

```
remote.php/dav/files/USERNAME/
```

Now Cyberduck enables file access to the Nextcloud server. 2

4.2.9 Accessing public shares over WebDAV 3

Nextcloud provides the possibility to access public shares over WebDAV. 4

To access the public share, open: 5

```
https://example.com/nextcloud/public.php/webdav 6
```

in a WebDAV client, use the share token as username and the (optional) share password as password. 7

Note: **Settings → Administration → Sharing → Allow users on this server to send shares to other servers.** This8 option also allows WebDAV access to public shares needs to be enabled in order to make this feature work.

4.2.10 Known problems 9

Problem 10

Windows does not connect using HTTPS. 11

Solution 1 12

The Windows WebDAV Client might not support Server Name Indication (SNI) on encrypted connections. If you13 encounter an error mounting an SSL-encrypted Nextcloud instance, contact your provider about assigning a dedicated IP address for your SSL-based server.

Solution 2 14

The Windows WebDAV Client might not support TLSv1.1 and TLSv1.2 connections. If you have restricted your15 server config to only provide TLSv1.1 and above the connection to your server might fail. Please refer to the WinHTTP documentation for further information.

Problem 16

You receive the following error message: **Error 0x800700DF: The file size exceeds the limit allowed and cannot17 be saved.**

Solution 1

Windows limits the maximum size a file transferred from or to a WebDAV share may have. You can increase the value **FileSizeLimitInBytes** in **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\WebClient\Parameters** by clicking on **Modify**.²

To increase the limit to the maximum value of 4GB, select **Decimal**, enter a value of **4294967295**, and reboot Windows³ or restart the **WebClient** service.

Problem 4

Accessing your files from Microsoft Office via WebDAV fails.⁵

Solution 6

Known problems and their solutions are documented in the [KB2123563](#) article.⁷

Problem 8

Cannot map Nextcloud as a WebDAV drive in Windows using self-signed certificate.⁹

Solution 10

1. Go to the your Nextcloud instance via your favorite Web browser.¹¹
2. Click through until you get to the certificate error in the browser status line.
3. View the cert, then from the Details tab, select Copy to File.
4. Save to the desktop with an arbitrary name, for example `myNextcloud.pem`.
5. Start, Run, MMC.
6. File, Add/Remove Snap-In.
7. Select Certificates, Click Add, My User Account, then Finish, then OK.
8. Dig down to Trust Root Certification Authorities, Certificates.
9. Right-Click Certificate, Select All Tasks, Import.
10. Select the Save Cert from the Desktop.
11. Select Place all Certificates in the following Store, Click Browse.
12. Check the Box that says Show Physical Stores, Expand out Trusted Root Certification Authorities, and select Local Computer there, click OK, Complete the Import.
13. Check the list to make sure it shows up. You will probably need to Refresh before you see it. Exit MMC.
14. Open Browser, select Tools, Delete Browsing History.
15. Select all but In Private Filtering Data, complete.
16. Go to Internet Options, Content Tab, Clear SSL State.
17. Close browser, then re-open and test.

Problem 1

You cannot download more than 50 MB or upload large files when the upload takes longer than 30 minutes using Web Client in Windows 7. 2

Solution 3

Workarounds are documented in the KB2668751 article. 4

4.2.11 Accessing files using cURL 5

Since WebDAV is an extension of HTTP cURL can be used to script file operations. 6

To create a folder with the current date as name: 7

```
$ curl -u user:pass -X MKCOL "https://example.com/nextcloud/remote.php/dav/files/ 8  
↳USERNAME/$(date '+%d-%b-%Y')"
```

To upload a file error.log into that directory: 9

```
$ curl -u user:pass -T error.log "https://example.com/nextcloud/remote.php/dav/files/ 10  
↳USERNAME/$(date '+%d-%b-%Y')/error.log"
```

To move a file: 11

```
$ curl -u user:pass -X MOVE --header 'Destination: https://example.com/nextcloud/  
↳remote.php/dav/files/USERNAME/target.jpg' https://example.com/nextcloud/remote.php/  
↳dav/files/USERNAME/source.jpg 12
```

To get the properties of files in the root folder: 13

```
$ curl -X PROPFIND -H "Depth: 1" -u user:pass https://example.com/nextcloud/  
↳remote.php/dav/files/USERNAME/ | xml_pp 14  
<?xml version="1.0" encoding="utf-8"?>  
<d:multistatus xmlns:d="DAV:" xmlns:oc="http://nextcloud.org/ns" xmlns:s="http://  
↳sabredav.org/ns">  
  <d:response>  
    <d:href>/nextcloud/remote.php/dav/files/USERNAME/</d:href>  
    <d:propstat>  
      <d:prop>  
        <d:getlastmodified>Tue, 13 Oct 2015 17:07:45 GMT</d:getlastmodified>  
        <d:resourcetype>  
          <d:collection/>  
        </d:resourcetype>  
        <d:quota-used-bytes>163</d:quota-used-bytes>  
        <d:quota-available-bytes>11802275840</d:quota-available-bytes>  
        <d:getetag>"561d3a6139d05"</d:getetag>  
      </d:prop>  
      <d:status>HTTP/1.1 200 OK</d:status>  
    </d:propstat>  
  </d:response>  
  <d:response>  
    <d:href>/nextcloud/remote.php/dav/files/USERNAME/welcome.txt</d:href>  
    <d:propstat>  
      <d:prop>  
        <d:getlastmodified>Tue, 13 Oct 2015 17:07:35 GMT</d:getlastmodified>
```

```

<d:getcontentlength>163</d:getcontentlength>
<d:resourcetype/>
<d:getetag>"47465fae667b2d0fee154f5e17d1f0f1"</d:getetag>
<d:getcontenttype>text/plain</d:getcontenttype>
</d:prop>
<d:status>HTTP/1.1 200 OK</d:status>
</d:propstat>
</d:response>
</d:multistatus>

```

1

4.3 Managing deleted files 2

When you delete a file in Nextcloud, it is not immediately deleted permanently, only moved into the trash bin. It is not 3 permanently deleted until you manually delete it, or when the Deleted Files app deletes it to make room for new files.

Find your deleted files by clicking on the **Deleted files** button on the Files page of the Nextcloud Web interface. You'll 4 have options to either restore or permanently delete files.

4.3.1 Quotas 5

Deleted files are not counted against your storage quota. Only your personal files count against your quota, not files 6 which were shared with you. (See *Storage quota* to learn more about quotas.)

4.3.2 What happens when shared files are deleted 7

Deleting files gets a little complicated when they are shared files, as this scenario illustrates: 8

1. User1 shares a folder “test” with User2 and User3 9
2. User2 (the recipient) deletes a file/folder “sub” inside of “test”
3. The folder “sub” will be moved to the trash bin of both User1 (owner) and User2 (recipient)
4. But User3 will not have a copy of “sub” in their trash bin

When User1 deletes “sub” then it is moved to User1's trash bin. It is deleted from User2 and User3, but not placed in 10 their trash bins.

When you share files, other users may copy, rename, move, and share them with other people, just as they can for any 11 computer files; Nextcloud does not have magic powers to prevent this.

4.3.3 How the deleted files app manages storage space 12

To ensure that users do not run over their storage quotas, the Deleted Files app allocates a maximum of 50% of their 13 currently available free space to deleted files. If your deleted files exceed this limit, Nextcloud deletes the oldest files (files with the oldest timestamps from when they were deleted) until it meets the memory usage limit again.

Nextcloud checks the age of deleted files every time new files are added to the deleted files. By default, 14 deleted files stay in the trash bin for 30 days. The Nextcloud server administrator can adjust this value in the config.php file by setting the trashbin_retention_obligation value. Files older than the trashbin_retention_obligation value will be deleted permanently. Additionally, Nextcloud calculates the maximum available space every time a new file is added. If the deleted files exceed the new maximum allowed

space Nextcloud will permanently delete those trashed files with the soonest expiration until the space limit is met ¹ again.

Note: Your administrator may have configured the trash bin retention period to override the storage space management. See admin documentation for more details. ²

4.4 Desktop and mobile synchronization³

For synchronizing files with your desktop computer, we recommend using the Nextcloud Sync Client for Windows,⁴ macOS and Linux.

The Nextcloud Desktop Sync Client enables you to connect to your Nextcloud Server. You can create folders in your home directory, and keep the contents of those folders synced with your Nextcloud server. Simply copy a file into the directory and the Nextcloud desktop client does the rest. Make a change to the files on one computer, it will flow across the others using these desktop sync clients. You will always have your latest files with you wherever you are. ⁵

Its usage is documented separately in the Nextcloud Desktop Client Manual.⁶

4.4.1 Mobile clients⁷

Visit your Personal page in your Nextcloud Web interface to find download links for Android and iOS mobile sync clients. Or, visit the Nextcloud download page. ⁸

4.5 Encrypting your Nextcloud files on the server⁹

Nextcloud includes a server side Encryption app, and when it is enabled by your Nextcloud administrator all of your Nextcloud data files are automatically encrypted on the server. Encryption is server-wide, so when it is enabled you cannot choose to keep your files unencrypted. You don't have to do anything special, as it uses your Nextcloud login as the password for your unique private encryption key. Just log in and out and manage and share your files as you normally do, and you can still change your password whenever you want. ¹⁰

Its main purpose is to encrypt files on remote storage services that are connected to your Nextcloud server. This is an easy and seamless way to protect your files on remote storage. You can share your remote files through Nextcloud in the usual way, however you cannot share your encrypted files directly from the remote service you are using, because the encryption keys are stored on your Nextcloud server, and are never exposed to outside service providers. ¹¹

If your Nextcloud server is not connected to any remote storage services, then it is better to use some other form of encryption such as file-level or whole disk encryption. Because the keys are kept on your Nextcloud server, it is possible for your Nextcloud admin to snoop in your files, and if the server is compromised the intruder may get access to your files. (Read Encryption in Nextcloud to learn more.) ¹²

4.5.1 Encryption FAQ¹³

How can encryption be disabled?¹⁴

The only way to disable encryption is to run the “decrypt all” script, which decrypts all files and disables encryption. ¹⁵

Is it possible to disable encryption with the recovery key? 1

Yes, if every user uses the file recovery key, “decrypt all” will use it to decrypt all files. 2

Can encryption be disabled without the user’s password? 3

If you don’t have the users password or file recovery key, then there is no way to decrypt all files. What’s more, 4 running it on login would be dangerous, because you would most likely run into timeouts.

Is it planned to move this to the next user login or a background job? 5

If we did that, then we would need to store your login password in the database. This could be seen as a security issue, 6 so nothing like that is planned.

Is group Sharing possible with the recovery key? 7

If you mean adding users to groups and make it magically work? No. This only works with the master key. 8

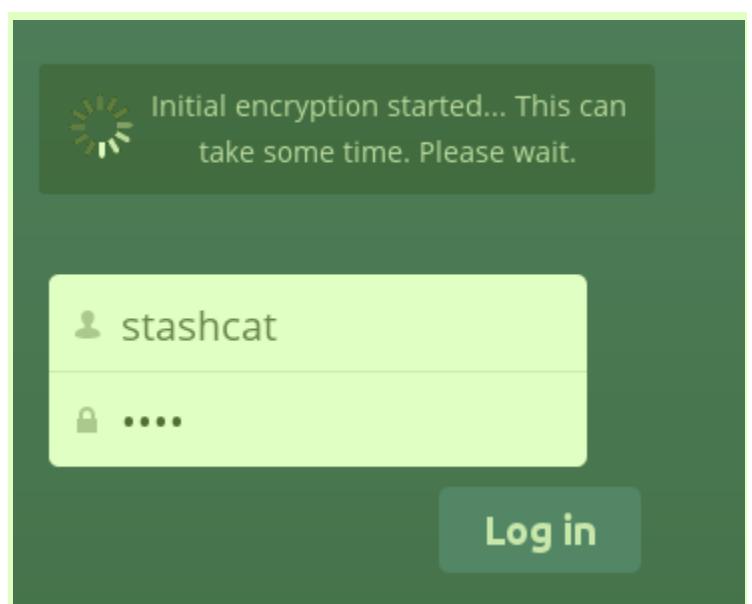
4.5.2 Using encryption 9

Nextcloud encryption is pretty much set it and forget it, but you have a few options you can use. 10

When your Nextcloud admin enables encryption for the first time, you must log out and then log back in to create your 11 encryption keys and encrypt your files. When encryption has been enabled on your Nextcloud server you will see a yellow banner on your Files page warning you to log out and then log back in:

Encryption App is enabled but your keys are not initialized, please log-out and log-in again 12

When you log back in it takes a few minutes to work, depending on how many files you have, and then you are returned 13 to your default Nextcloud page.



Note: You must never lose your Nextcloud password, because you will lose access to your files. Though there is an optional recovery option that your Nextcloud administrator may enable; see the Recovery Key Password section (below) to learn about this. 1

4.5.3 Sharing encrypted files 2

Only users who have private encryption keys have access to shared encrypted files and folders. Users who have not yet created their private encryption keys will not have access to encrypted shared files; they will see folders and filenames, but will not be able to open or download the files. They will see a yellow warning banner that says “Encryption App is enabled but your keys are not initialized, please log-out and log-in again.” 3

Share owners may need to re-share files after encryption is enabled; users trying to access the share will see a message advising them to ask the share owner to re-share the file with them. For individual shares, un-share and re-share the file. For group shares, share with any individuals who can’t access the share. This updates the encryption, and then the share owner can remove the individual shares. 4

Recovery key password 5

If your Nextcloud administrator has enabled the recovery key feature, you can choose to use this feature for your account. If you enable “Password recovery” the administrator can read your data with a special password. This feature enables the administrator to recover your files in the event you lose your Nextcloud password. If the recovery key is not enabled, then there is no way to restore your files if you lose your login password. 6

Encryption 7

Enable recovery key (allow to recover users files in case of password loss): 8

..... Recovery key password 9

..... Repeat Recovery key password

Enabled
 Disabled

4.5.4 Files not encrypted 10

Only the data in your files is encrypted, and not the filenames or folder structures. These files are never encrypted: 11

- Old files in the trash bin.
 - Image thumbnails from the Gallery app.
 - Previews from the Files app.
 - The search index from the full text search app.
 - Third-party app data
- 12

Only those files that are shared with third-party storage providers can be encrypted, the rest of the files may not be **1** encrypted.

Change private key password **2**

This option is only available if the encryption password has not been changed by the administrator, but only the log-in **3** password. This can occur if your Nextcloud provider uses an external user back-end (for example, LDAP) and changed your login password using that back-end configuration. In this case, you can set your encryption password to your new login password by providing your old and new login password. The Encryption app works only if your login password and your encryption password are identical.

4.6 File Sharing **4**

Nextcloud users can share files and folders. Possible targets are: **5**

- public links
- users
- groups
- circles
- talk conversations
- users or groups on federated Nextcloud servers

6

Note: Some options may not be available due to administrative configuration. See admin documentation for details. **7**

4.6.1 Public link shares **8**

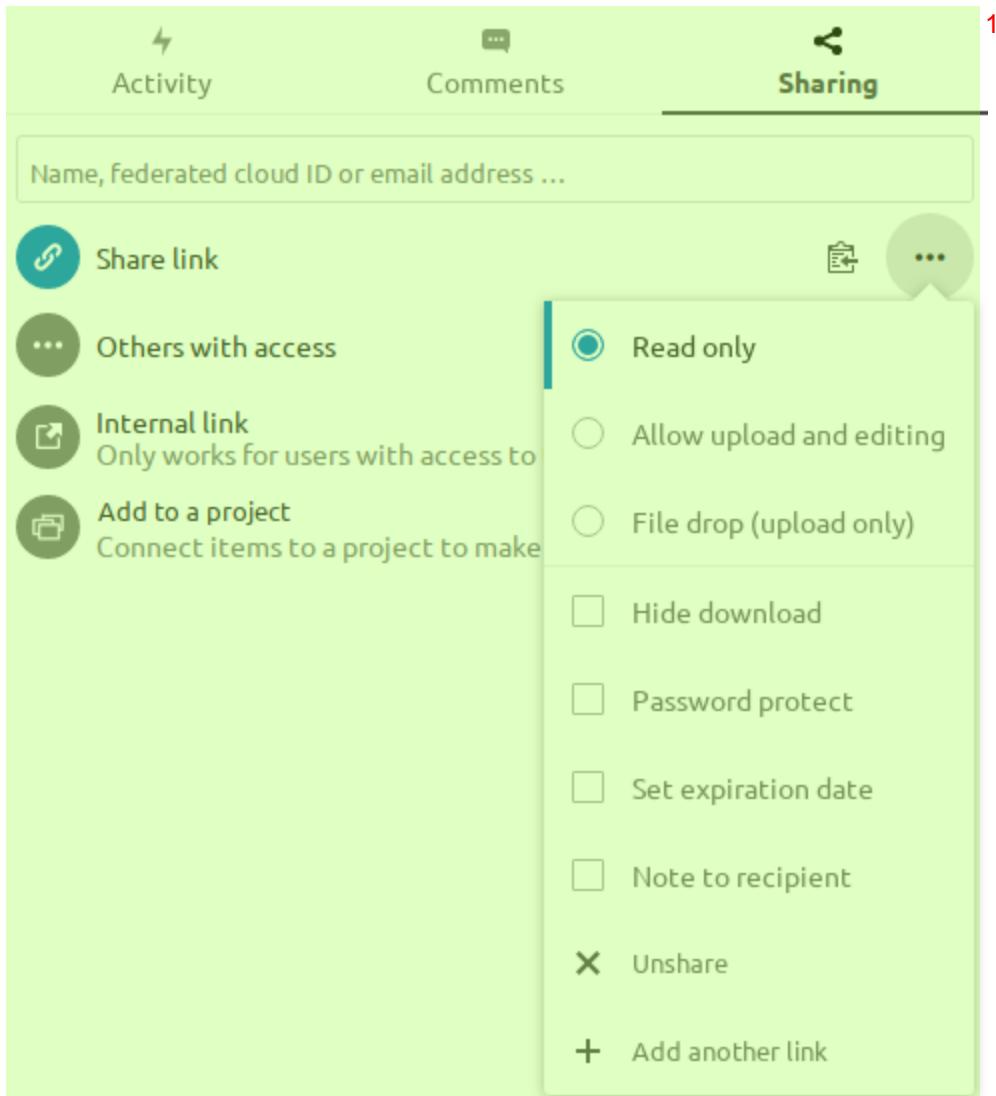
You can share files and folders via public links. **9**

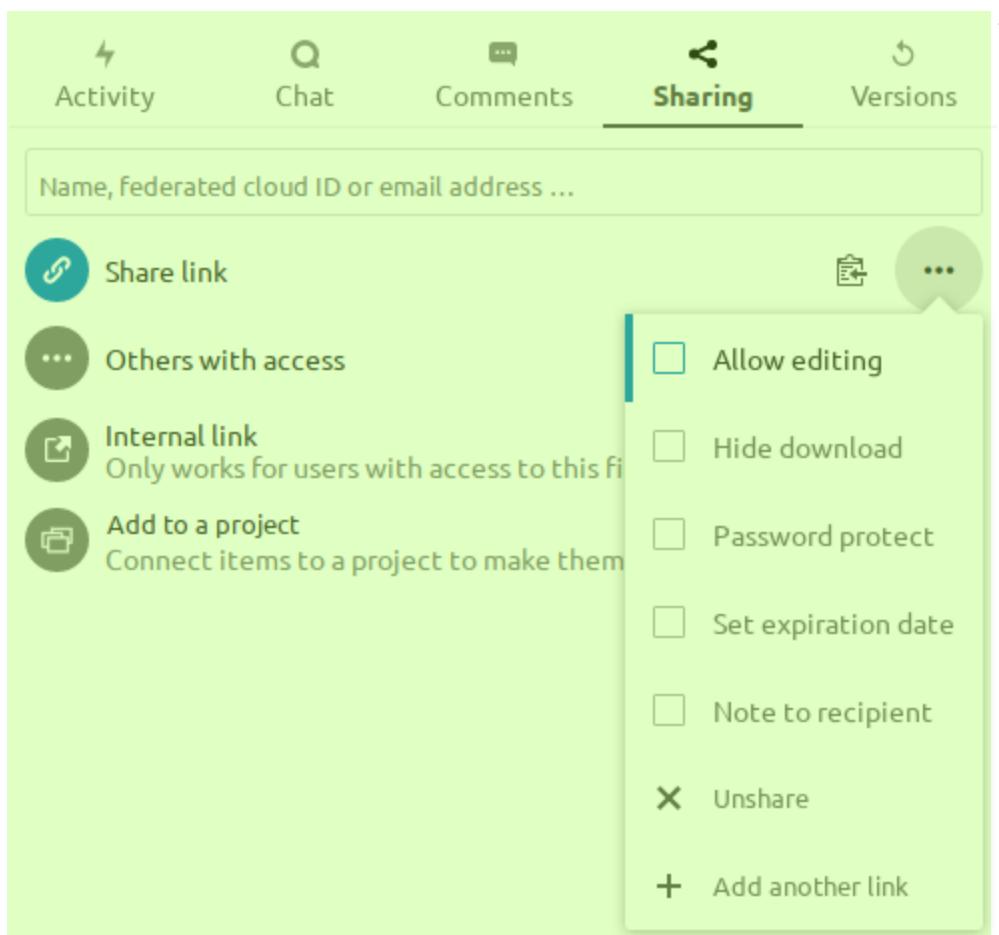
A random 15-digit token will be created. The link will look like <https://cloud.example.com/s/10yxcFKRWBqYYzp4>. **10**

A number of options are available for public *folder* shares: **11**

- **Read only** to allow viewing and downloading
- **Allow upload and editing**
- With **File drop**, the sharee can only upload files to a folder without seeing the files that are already in that folder.
- **Hide download** prevents the sharee from downloading
- **Password protect**
- **Set expiration date** will automatically disable the share
- **Note to recipient**
- **Unshare** to revert the share
- **Add another link** to create multiple public links with different rights

12



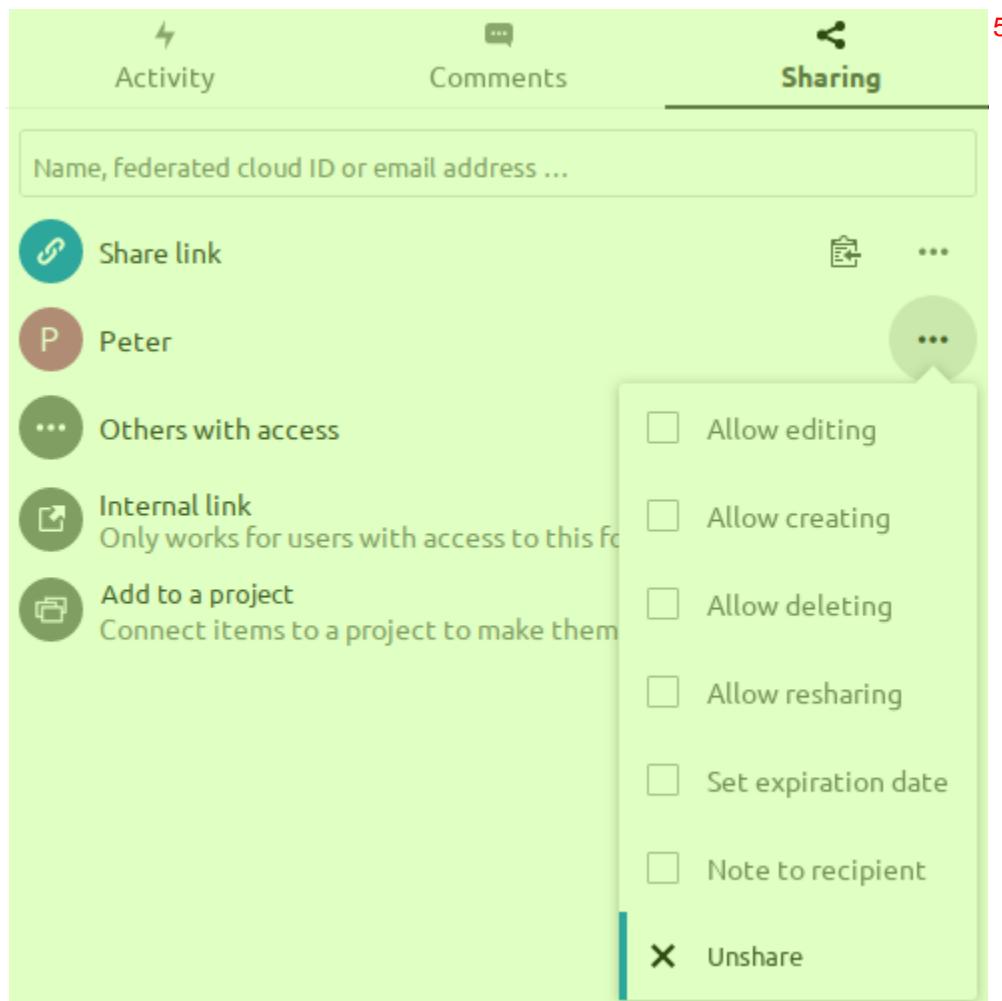


For public *file* shares, you may allow editing the file with one of Nextcloud's collaborative editing solutions: [1](#)

Note: Password protection as well as file expiration are not propagated using Federated File Sharing in current [2](#) Nextcloud releases. This will be adjusted in Nextcloud 22.

4.6.2 Internal shares with users and groups [3](#)

When sharing with users, groups, circles or members of a Talk conversation, rights for the files or folder contents are [4](#) adjustable:

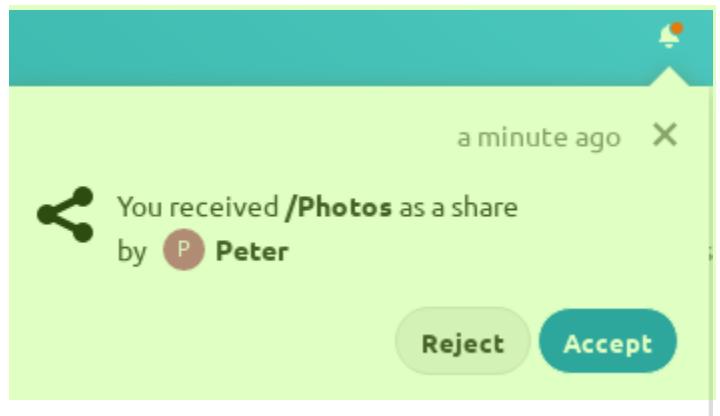


As a sharee, you can configure if you automatically want to accept all incoming shares and have them added to your [6](#) root folder, or if you want to be asked each time if you want to accept or decline the share.

For adjusting the acceptance setting, go to **Settings > Personal > Sharing**: [7](#)

4.6.3 Others with access [8](#)

In order to find out if a file or folder is accessible to others through sharing of a superior folder hierarchy level, click [9](#) on **Others with access** in the sharing tab:



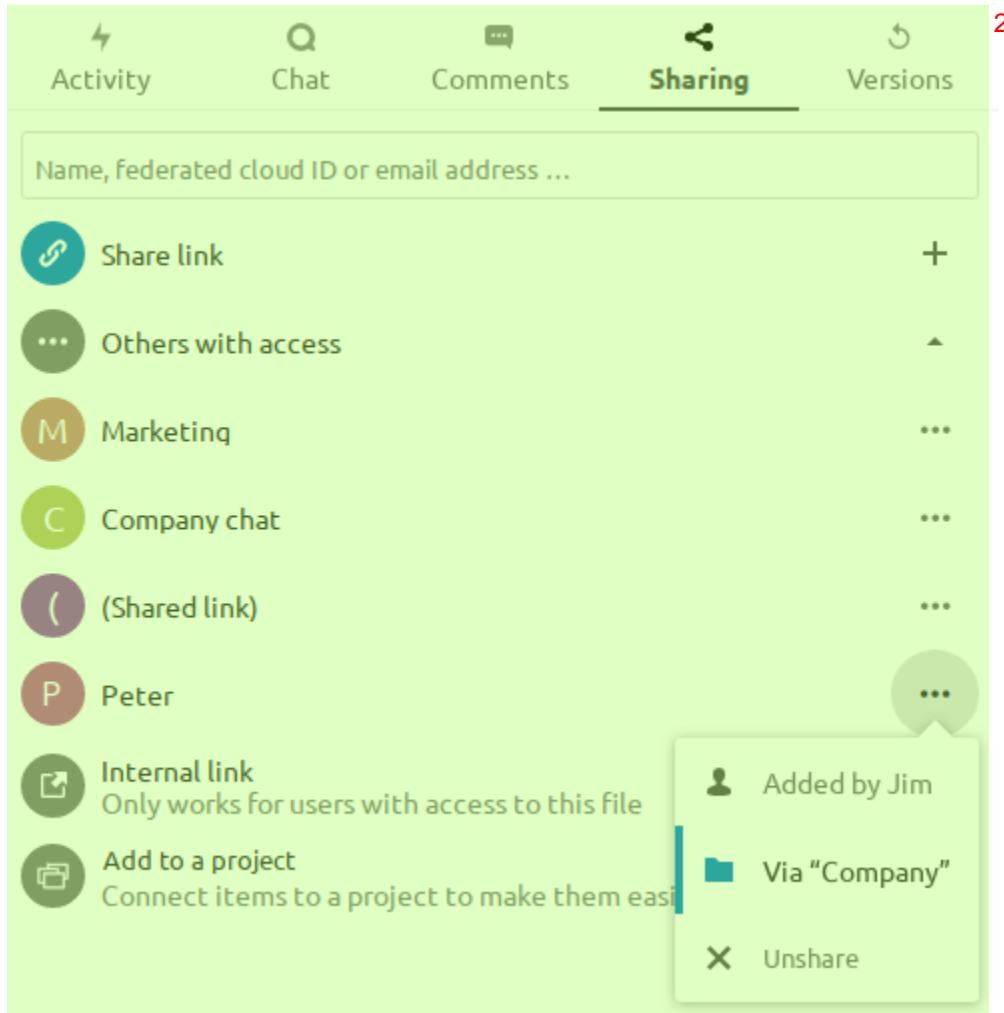
The screenshot shows the "Sharing" tab of the Nextcloud interface. At the top left is the word "Sharing" with a red '2' superscript. To its right is a checkbox labeled "Accept user and group shares by default" with a checked state and a red '3' superscript. Below this is a search bar with placeholder text "Name, federated cloud ID or email address ...".

Below the search bar are four sharing options:

- Share link** (green icon)
- Others with access** (grey icon, highlighted with a red box)
- Internal link** (green icon)
Only works for users with access to this file
- Add to a project** (grey icon)
Connect items to a project to make them easier to find

A large red arrow points from the "Sharing" tab at the top to the "Others with access" option in the list below.

The list shows all users, groups, chats etc. that the current object has been given access to through sharing of a superior 1 folder in the hierarchy:



Click on the three dots to: 3

- see who initiated the share
- see where the share was initiated (click to navigate to the folder, as far as you have access there)
- unshare the initial share (only accessible for the share owner)

Note: This information is only visible to the owner of a file/folder or sharees with resharing rights. 5

4.7 Federated Shares 6

Federation Sharing allows you to mount file shares from remote Nextcloud servers, in effect creating your own cloud 7 of Nextclouds. You can create direct share links with users on other Nextcloud servers.

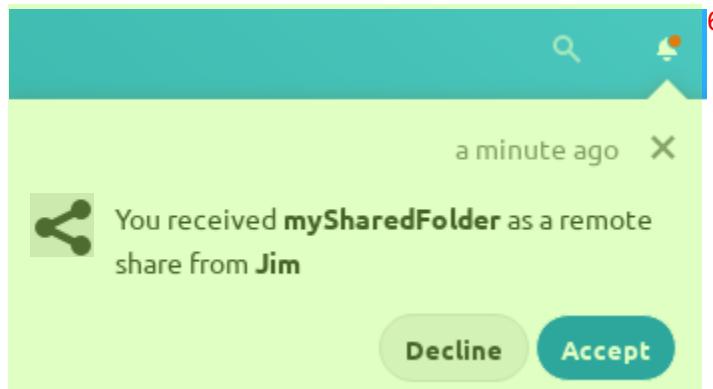
4.7.1 Creating a new Federation Share¹

Federation sharing is enabled by default. Follow these steps to create a new share with other Nextcloud or ownCloud servers:²

Go to your Files page and click the Share icon on the file or directory you want to share. In the sidebar enter the username and URL of the remote user in this form: <username>@<nc-server-url>. In this example, that is bob@cloud.example.com:³



The sharee is receiving a notification in their Nextcloud, allowing them to either accept or decline the incoming share:⁵

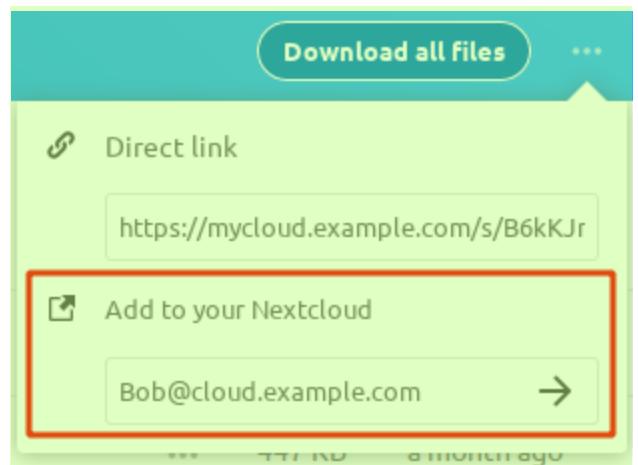


4.7.2 Adding a public share to your Nextcloud⁷

Nextcloud public link share pages offer an option to add that file or folder as a federated share into your own Nextcloud instance. Just enter your <username>@<nc-server-url> just like shown for outbound shares above:⁸

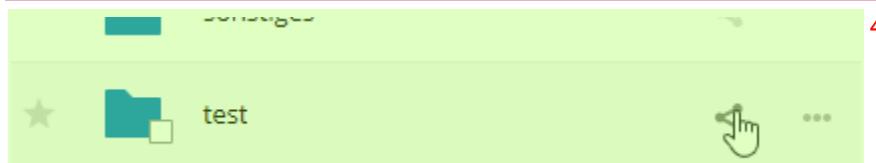
4.8 Making anonymous uploads⁹

You may create your own special upload directories so that other people can upload files to you without having to log in to the server, and without being a Nextcloud user. They will not be allowed to see the contents of this directory, or to make any changes. This is an excellent alternative to sending large attachments via email, using an FTP server, or using commercial file-sharing services.¹⁰

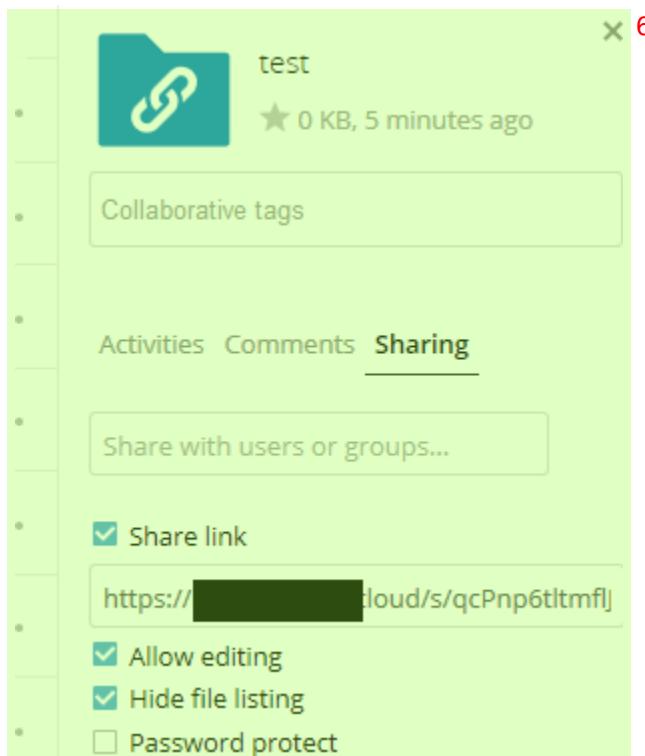


4.8.1 Setting up your own file drop ²

Go to Files and create or choose the folder, the anonymous upload should be made to: ³



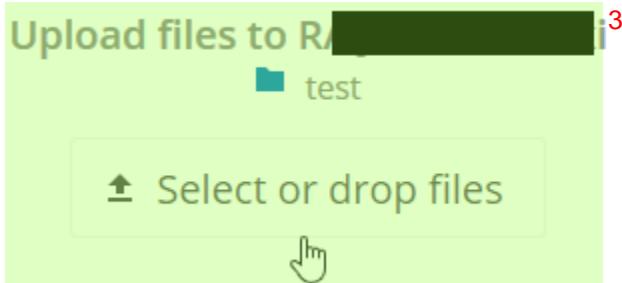
Check Share Link, Allow editing, Hide file listing: ⁵



Now you can send the link to the upload folder manually or by using the Nextcloud send function, if your administrator ⁷ has enabled it.

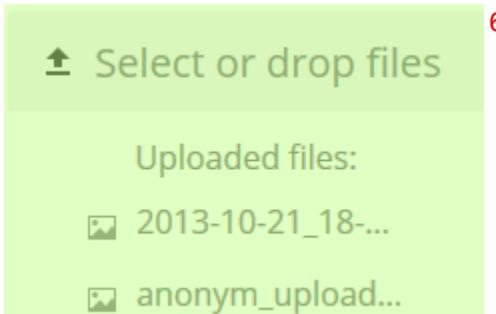
4.8.2 Uploading files ¹

Using the anonymous upload function is simple. You receive a link to the upload folder, click the link, and then you'll see a Nextcloud page with a “Click to upload” button: ²



This opens a file picker, and you select the file or directory you want to upload. You're also able to just drop files into the window. ⁴

When your upload is completed, the filenames are listed: ⁵



4.9 Large file uploads ⁷

When uploading files through the web client, Nextcloud is limited by PHP and Apache configurations. By default, PHP is configured for only 2 megabyte uploads. As this default upload limit is not entirely useful, we recommend that your Nextcloud admin increase the Nextcloud variables to sizes appropriate for users. ⁸

Modifying certain Nextcloud variables requires administrative access. If you require larger upload limits than have been provided by the default (or already set by your administrator): ⁹

- Contact your administrator to request an increase in these variables ¹⁰
- Refer to the section in the Admin Documentation that describes how to manage file upload size limits.

4.10 Storage quota ¹¹

Your Nextcloud admin has the option to set a storage quota on users. Look at your the Personal page to see what your quota is, and how much you have used. ¹²



It may be helpful to understand how your quota is calculated.¹

Metadata (thumbnails, temporary files, cache, and encryption keys) takes up about 10% of disk space, but is not counted against user quotas. Some apps store information in the database, such as the Calendar and Contacts apps. This data is excluded from your quota.

When other users share files with you, the shared files count against the original share owner's quota. When you share a folder and allow other users or groups to upload files to it, all uploaded and edited files count against your quota. When you re-share files shared with you, the re-share still counts against the quota of the original share owner.

Encrypted files are a little larger than unencrypted files; the unencrypted size is calculated against your quota.⁴

Deleted files that are still in the trash bin do not count against quotas. The trash bin is set at 50% of quota. Deleted file aging is set at 30 days. When deleted files exceed 50% of quota then the oldest files are removed until the total is below 50%.

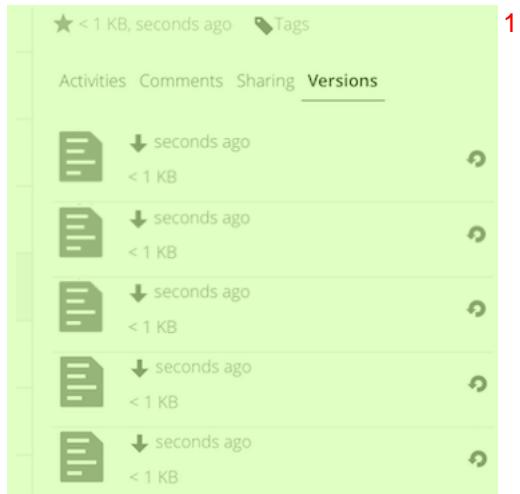
Note: Your administrator may have configured the trash bin retention period to override the storage space management. See admin documentation for more details.⁶

When version control is enabled, the older file versions are not counted against quotas.⁷

If you create a public share via URL and allow uploads, any uploaded files count against your quota.⁸

4.11 Version control⁹

Nextcloud supports simple version control system for files. Versioning creates backups of files which are accessible via the Versions tab on the Details sidebar. This tab contains the history of the file where you can roll back a file to any previous version. Changes made at intervals greater than two minutes are saved in `data/[user]/files_versions`.¹⁰



To restore a specific version of a file, click the circular arrow to the left. Click on the timestamp to download it.¹²

The versioning app expires old versions automatically to make sure that the user doesn't run out of space. This pattern¹³ is used to delete old versions:

- For the first second we keep one version¹⁴
- For the first 10 seconds Nextcloud keeps one version every 2 seconds
- For the first minute Nextcloud keeps one version every 10 seconds

- For the first hour Nextcloud keeps one version every minute 1
- For the first 24 hours Nextcloud keeps one version every hour
- For the first 30 days Nextcloud keeps one version every day
- After the first 30 days Nextcloud keeps one version every week

The versions are adjusted along this pattern every time a new version gets created. 2

The version app never uses more than 50% of the user's currently available free space. If the stored versions exceed 3 this limit, Nextcloud deletes the oldest versions until it meets the disk space limit again.

4.12 Projects 4

Users can associate files, chats and other items with each other in projects. The various apps will present these items 5 in a list, allowing users to immediately jump to them. Projects are Nextcloud wide. When a user shares a file that is part of a project, the share recipient can see that project, too. A click on any of the items in a project leads right to it, be it a chat, a file or a task.

4.12.1 Create a new project 6

A new project can be created by linking two items together. Start off by opening a file or folders sharing sidebar. 7

Click *Add to a project* and select the type of item you want to link with the current file/folder. A selector will open 8 that allows you selecting a Talk conversation for example.

Once the item has been selected a new project is being created and listed in the sharing tab of the sidebar. The same project will also appear in the sharing sidebar of the linked items.

The list entry shows quick links to a limited number of items. By opening the context menu, the project can be renamed and the full list of items can be expanded.

4.12.2 Adding more entries to a project 9

If another item should be added to an already existing project this can be done by searching for the project name in 10 the *Add to a project* picker.

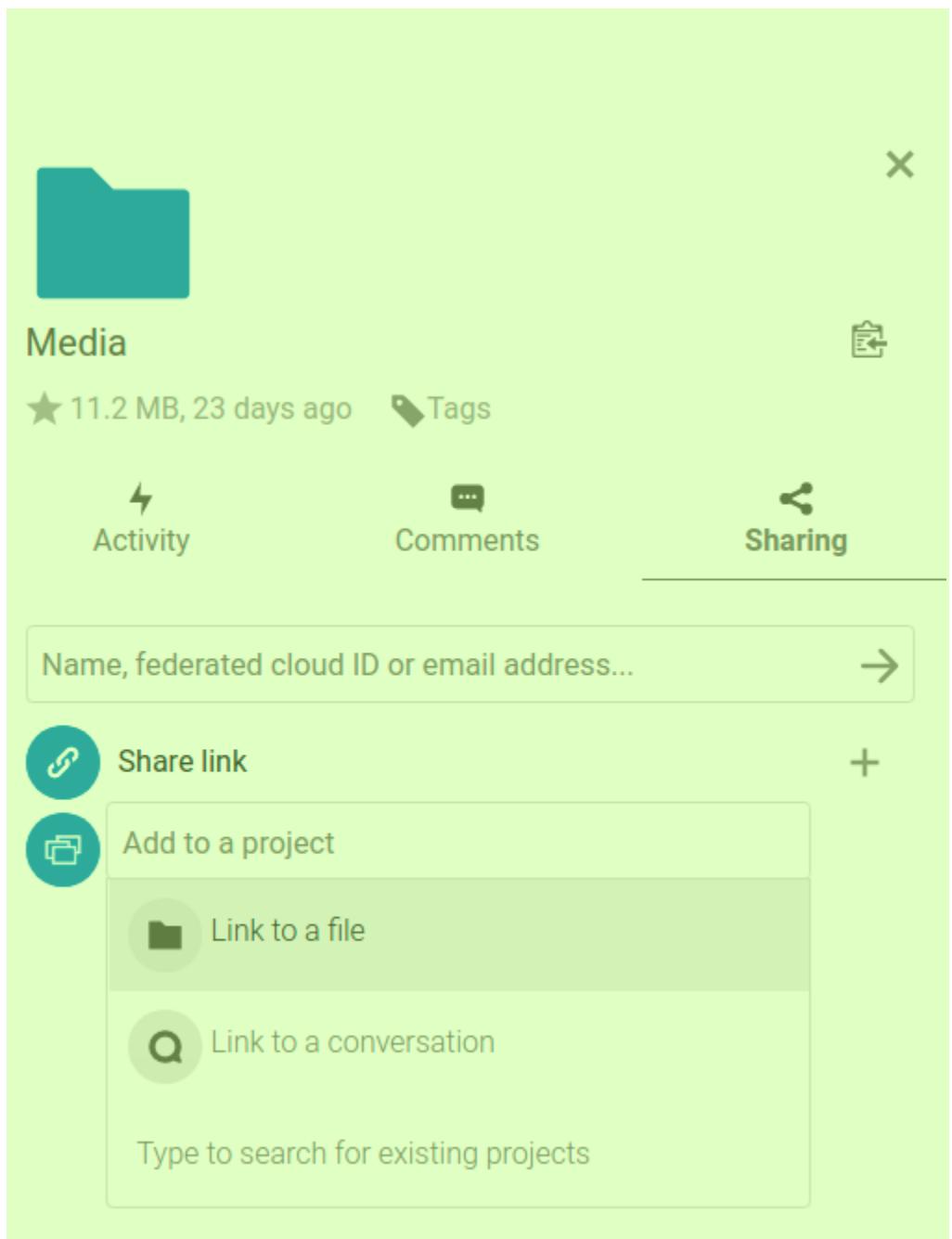
4.12.3 Visibility of projects 11

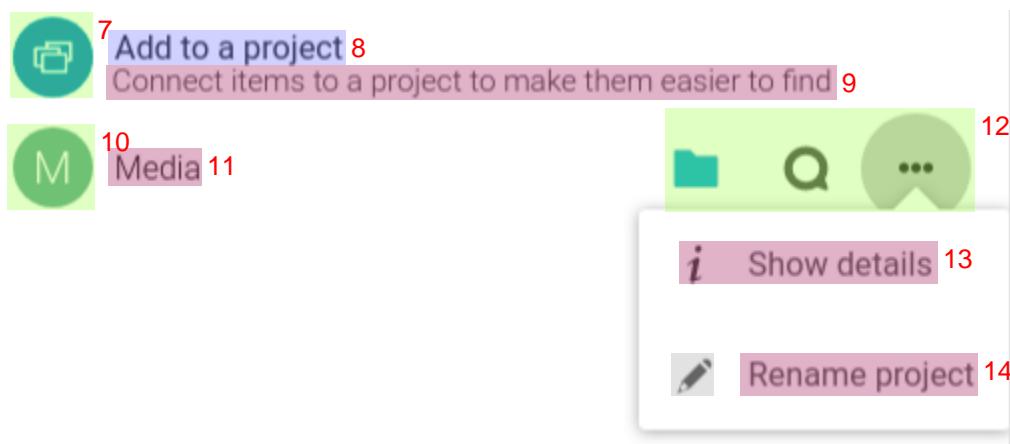
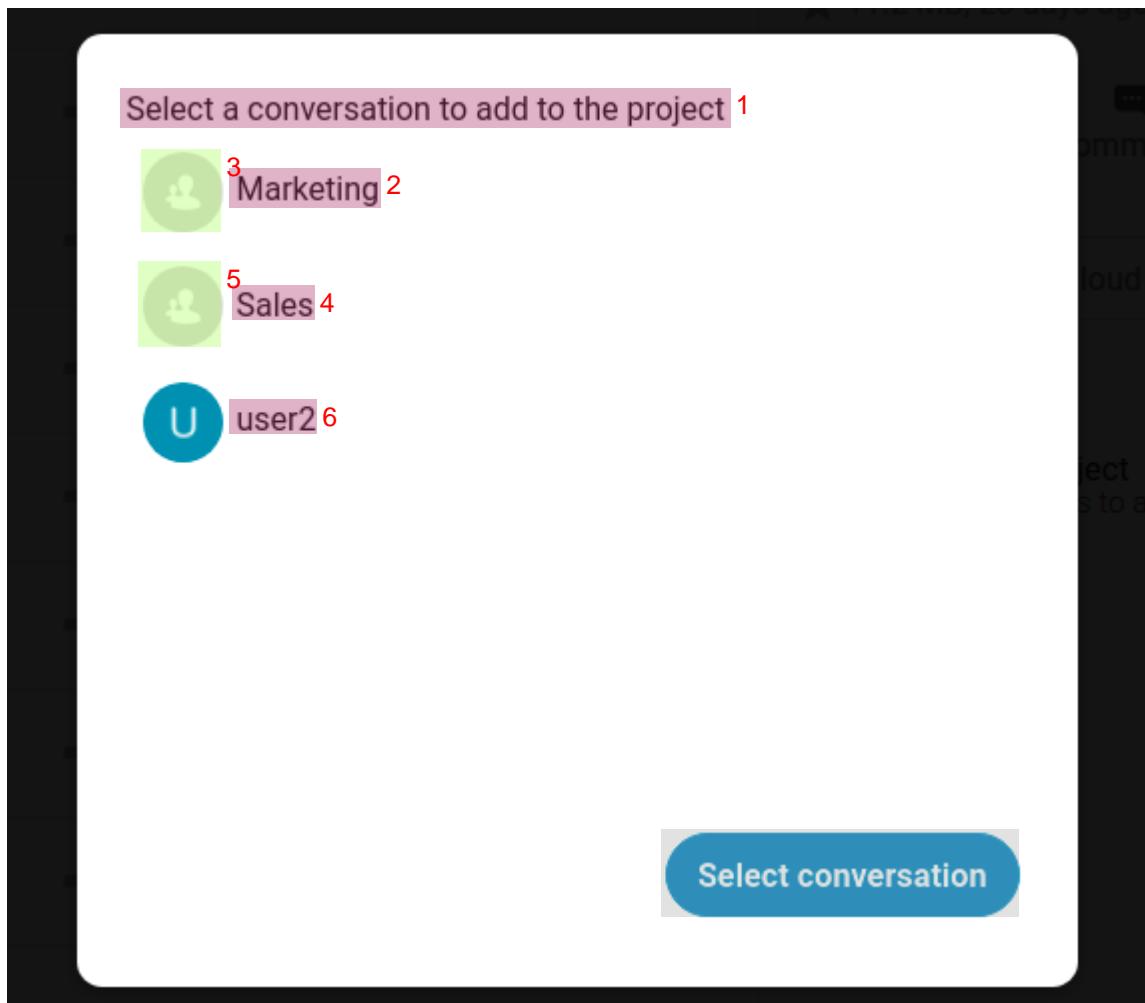
Projects do not influence the access and visibility of the different items. Users will only see projects of other users if 12 they have access to all contained items.

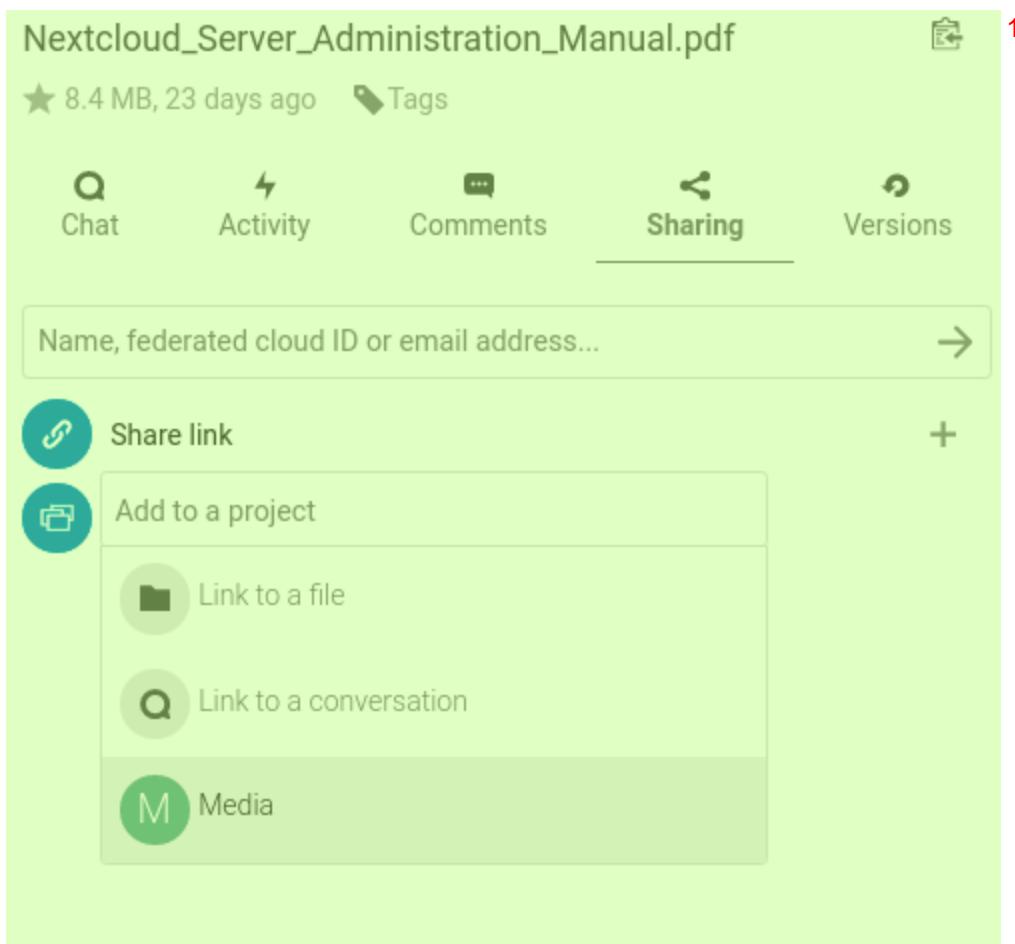
4.13 Transfer Ownership 13

Users can transfer the ownership of files and folders to other users. Share ownerships of those transferred files/folders 14 will also be transferred.

1. Navigate to *Settings > Personal > Sharing > Files*. 15
2. Click on *Choose file or folder to transfer* >> A file picker opens, showing all files and folders in the user's account.
3. Pick a file or folder and click on *Choose* >> The chosen file or folder name gets displayed.



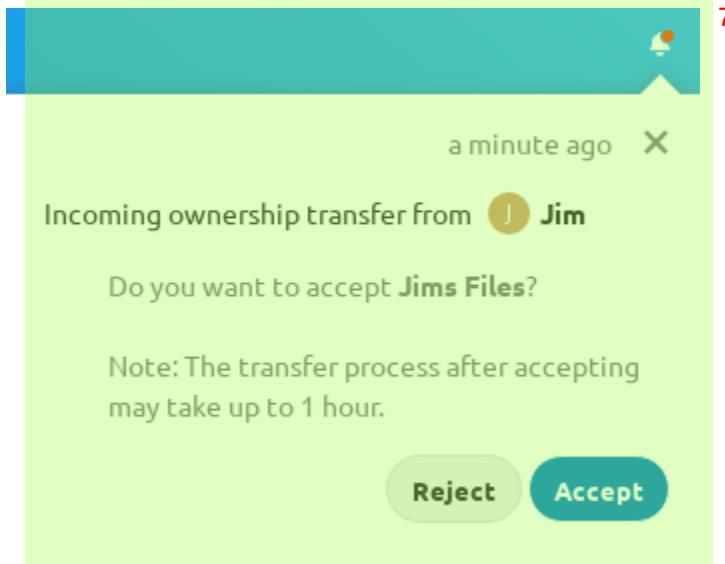




4. Click on *Change* to change the choice if necessary. 2
5. Pick a new owner by typing their name into the search field next to *New owner*. 3
6. Click on *Transfer*. 4

Note: The username autocomplete or listing may be limited due to administrative visibility configuration. See admin documentation for details. 5

7. The target user receives a notification where they are being asked whether to accept or reject the incoming transfer. 6



8. If accepted, the target user finds the transferred files and folders in their root under a folder *Transferred from [user] on [timestamp]*. 8
9. The source user gets informed about the acceptance or rejection by a notification. 9

4.14 Using Federation Shares 9

Federation Sharing allows you to mount file shares from remote Nextcloud servers, in effect creating your own cloud of Nextclouds. You can create direct share links with users on other Nextcloud servers. 10

4.14.1 Creating a new Federation Share 11

Federation sharing is enabled on new or upgraded Nextcloud installations by default. Follow these steps to create a new share with other Nextcloud or ownCloud 9+ servers: 12

1. Go to your *Files* page and click the **Share** icon on the file or directory you want to share. In the sidebar enter the username and URL of the remote user in this form: <username>@<oc-server-url>. The form automatically confirms the address that you type and labels it as “remote”. Click on the label. 13
2. When your local Nextcloud server makes a successful connection with the remote Nextcloud server you’ll see a confirmation. Your only share option is **Can edit**. 14



Click the Share button anytime to see who you have shared your file with. Remove your linked share anytime by clicking the trash can icon. This only unlinks the share, and does not delete any files. 2

4.14.2 Creating a new Federated Cloud Share via email 3

Use this method when you are sharing with users on ownCloud 8.x and older. 4

What if you do not know the username or URL? Then you can have Nextcloud create the link for you and email it to your recipient. 5

A screenshot of the 'Share link' creation dialog. It includes the following fields and options:

- Share link: A checked checkbox next to the label.
- http://ubuntu2/owncloud/index.php/s/ujh7VbEFuvjXIGu: A text input field containing a generated share link.
- Password protect: An unchecked checkbox next to the label.
- friend@example.com: A text input field containing an email address.
- Set expiration date: An unchecked checkbox next to the label.

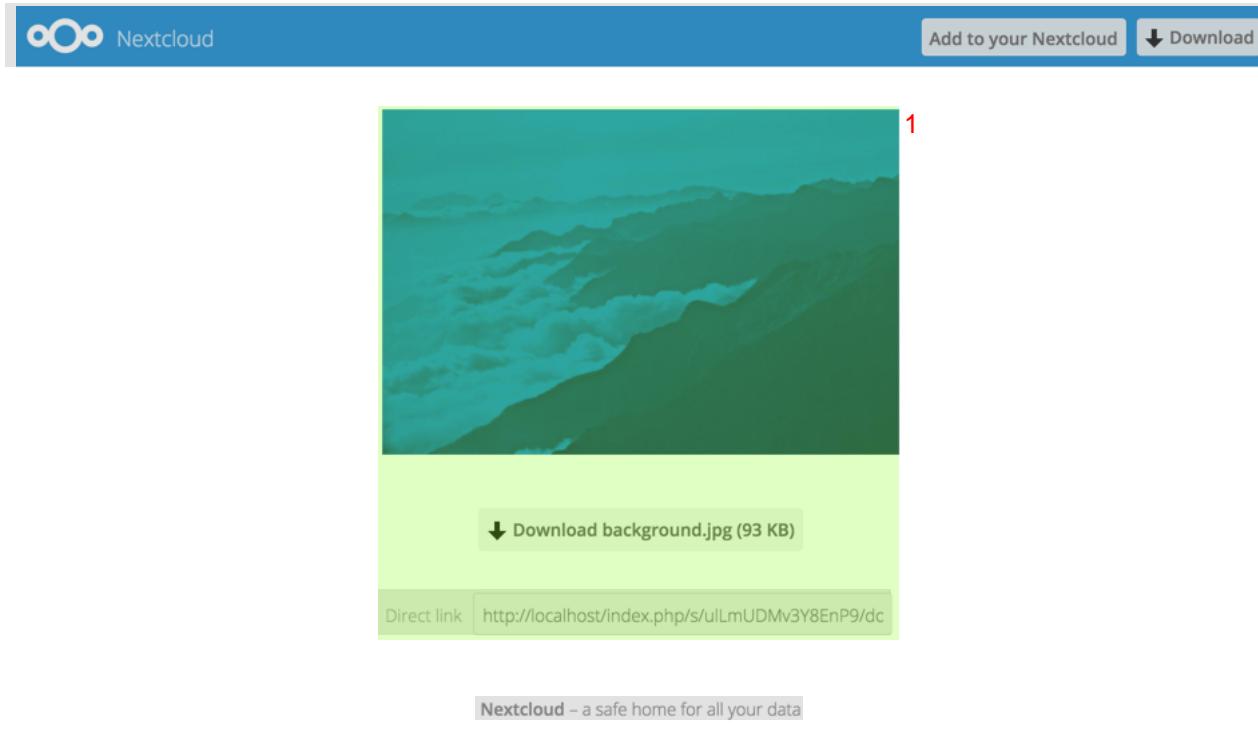
A red number '6' is positioned in the top right corner of the screenshot area.

When your recipient receives your email they will have to take a number of steps to complete the share link. First they must open the link you sent them in a Web browser, and then click the **Add to your Nextcloud** button. 7

The **Add to your Nextcloud** button changes to a form field, and your recipient needs to enter the URL of their Nextcloud or ownCloud server in this field and press the return key, or click the arrow. 8

Next, they will see a dialog asking to confirm. All they have to do is click the **Add remote share** button and they're finished. 9

Remove your linked share anytime by clicking the trash can icon. This only unlinks the share, and does not delete any files. 10



A screenshot of a Nextcloud interface showing a list of files. The columns are "Size" and "Modified". There are two items listed:

	Size	Modified
...	2.6 MB	2 months ago
...	3 MB	2 months ago

Download

Groupware

Nextcloud Groupware is a bundle of apps which is consisting of an **Mail**-client (IMAP/POP3) and a **Calendar** and **Contacts** server (CalDAV/CardDAV) with the respective web interfaces.²

We complete those productivity tools with **Deck**, a project management tool which allows you to create Kanban-style³ task boards and share them with your team.

You can find out more about Nextcloud Groupware on our website.⁴

5.1 Using the Contacts app⁵

The Contacts app is not enabled by default in Nextcloud latest and needs to be installed separately from our App Store.⁶

The Nextcloud Contacts app is similar to other mobile contact applications, but with more functionality. Let's run⁷ through basic features that will help you maintain your address book in the application.

Below, you will learn how to add contacts, edit or remove contacts, upload a contact picture and manage your Contact⁸ app address books.

5.1.1 Adding Contacts⁹

When you first access the Contacts app, an empty default address book becomes available:¹⁰

To add contacts into your address book, you can use one of the following methods:¹¹

- Import contacts using a Virtual Contact File (VCF/Vcard) file¹²
- Add contacts manually

The fastest way to add a contact is to use a Virtual Contact File (VCF/Vcard) file.¹³

Importing Virtual Contacts¹⁴

To Import Contacts Using a VCF/Vcard File:¹⁵

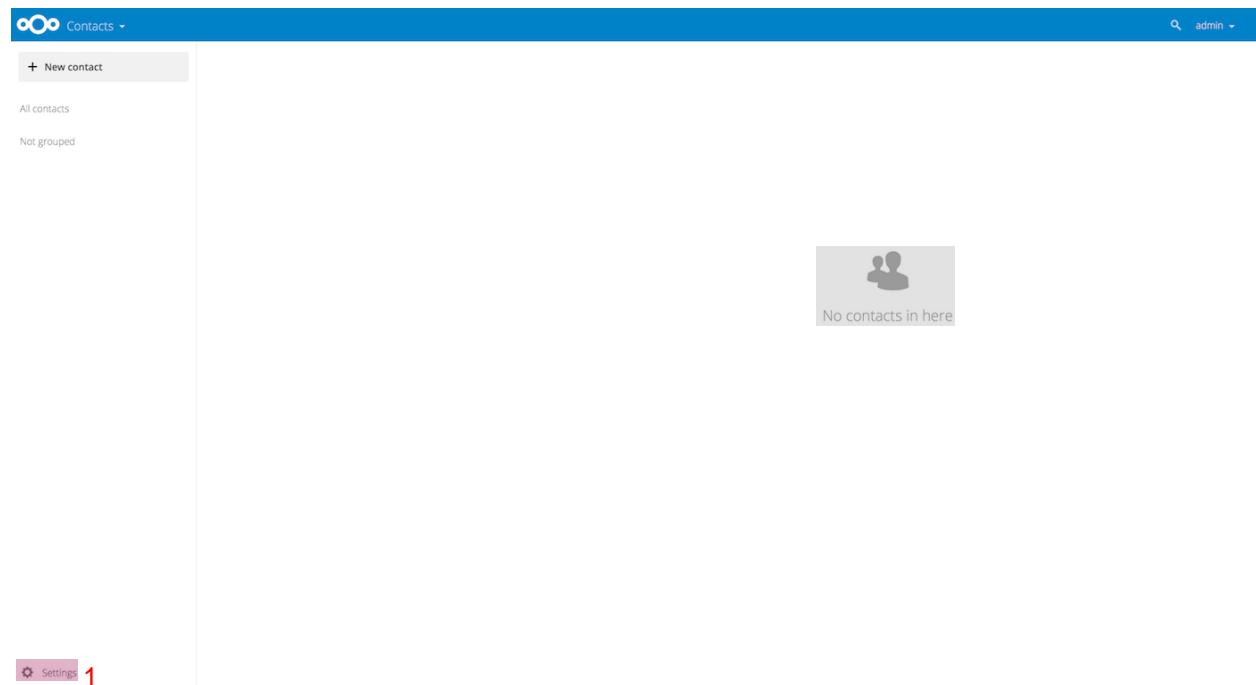
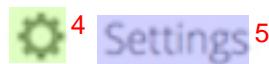
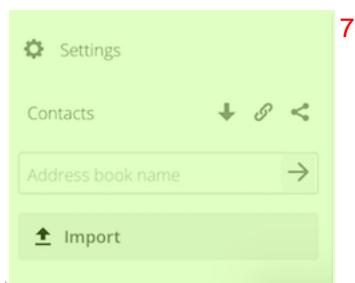


Fig. 5.1: Default Address Book (empty) 3

1. Find “Settings” at the bottom of the left sidebar, next to the gear button: 2



2. Click the gear button. The Contacts app “Import” button will appear: 6



Note: The Contacts app only supports import of vCards version 3.0 and 4.0. 8

3. Click the “Import” button and upload your VCF/Vcard file. 9

After the import is complete, you will see your new contact in your address book.

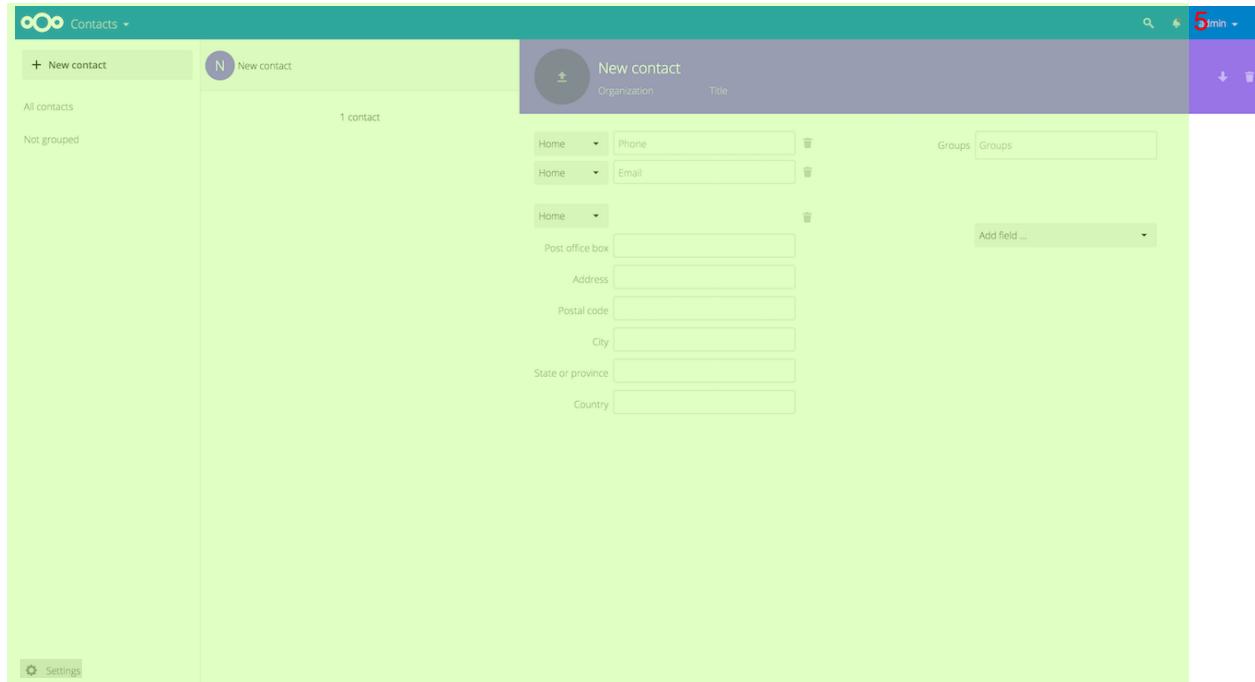
Adding Contacts Manually 1

If you can't import virtual contacts, the Contacts app enables you to **add contacts** manually. 2

To Create a New Contact: 3

1. Click the + New contact button. 4

An empty new contact configuration opens in the Application View field:



2. Specify the new contact information. Changes that you made are implemented immediately. 6

Edit or Remove Contact Information 7

The Contacts app enables you to edit or remove contact information. 8

To edit or remove contact information: 9

1. Navigate to the specific contact that you want to modify. 10
2. Select the information in the field that you want to edit or remove.
3. Make your modifications or click on the trash bin.

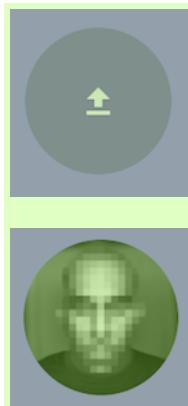
Changes or removals that you made to any contact information are implemented immediately. 11

Contact Picture 12

To add a picture for your new contacts, click on the upload button: 13

After you have set a contact picture, it will look like this: 14

If you want to upload a new one, remove it, view it in full size or download it, click on the contacts picture for the following options to appear: 15



5.1.2 Adding and Managing Address Books ²

Clicking on the “Settings” (gear) button at the bottom of the left sidebar provides access to Contacts app settings. This field shows all available address books, certain options for each address book, and enables you to create new address books, simply by specifying an address books name: ³

The Contacts settings is also where you can share, export and delete address books. You will find the CardDAV URLs⁴ there.

See *Groupware* for more details about syncing your address books with iOS, macOS, Thunderbird and other CardDAV⁵ clients.

5.2 Using the Calendar app⁶

Note: The calendar app is not enabled by default and needs to be installed separately from our App Store. Please ask ⁷ your Administrator for it.

The Nextcloud Calendar app works similar to other calendar applications you can sync your Nextcloud calendars and ⁸ events with.

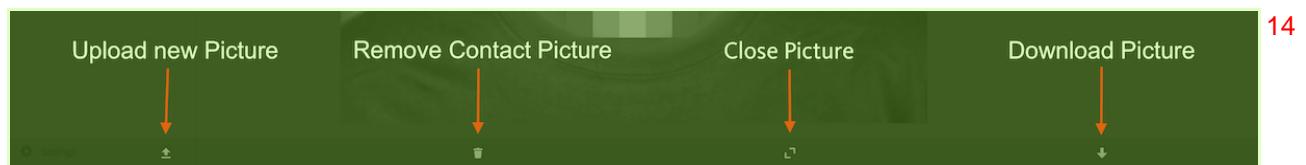
When you first access the Calendar app, a default first calendar will be pre-generated for you. ⁹

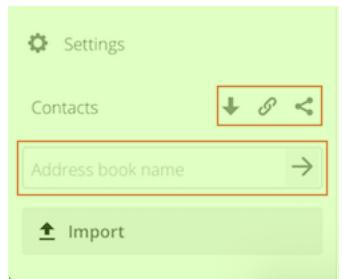
5.2.1 Managing your calendars ¹⁰

Import a Calendar ¹¹

If you want to transfer your calendar and their respective events to your Nextcloud instance, importing is the best way¹² to do so.

1. Click on the settings-icon labeled with Settings & Import at the left-bottom. ¹³





1

2

3

2. After clicking on + Import Calendar you can select one or more calendar files from your local device to 1 upload.
3. The upload can take some time and depends on how big the calendar you import is.

Note: The Nextcloud Calendar application only supports iCalendar-compatible .ics-files, defined in RFC 5545. 2

Create a new Calendar 3

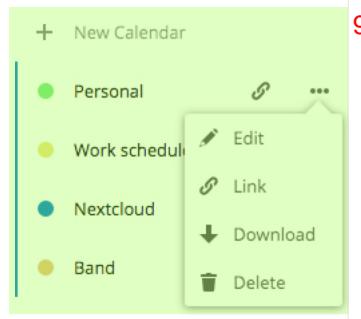
If you plan to setup a new calendar without transferring any old data from your previous calendar, creating a new 4 calendar is the way you should go.

1. Click on + New Calendar in the left sidebar. 5
2. Type in a name for your new calendar, e.g. "Work", "Home" or "Studies".
3. After clicking on the checkmark, your new calendar is created and can be synced across your devices, filled with new events and shared with your friends and colleagues.

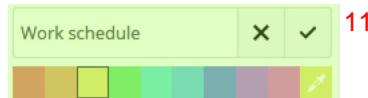
Edit, Download or Delete a Calendar 6

Sometimes you may want to change the color or the entire name of a previous imported or created calendar. You may 7 also want to export it to your local hard drive or delete it forever.

Note: Please keep in mind that deleting a calendar is a irreversible action. After deletion, there is no way of restoring 8 the calendar unless you have a local backup.



1. Click on the three-dot-menu of the respective calendar. 10



2. Click on Edit, Download or Delete. 12

Sharing calendars 13

You may share your calendar with other users or groups. Calendars may be shared with write access or read-only. 14 When sharing a calendar with write access, users with whom the calendar is shared will be able to create new events into the calendar as well as edit and delete existing ones.

Note: Calendar shares currently can't be accepted or rejected. If you want to stop having a calendar that someone shared with you, you can click on the 3-dot menu next to the calendar in the calendar list and click on "Unshare from me".¹

Publishing a calendar²

Calendars can be published through a public link to make them viewable (read-only) to external users. You may create a public link by opening the share menu for a calendar and clicking on « + » next to « Share link ». Once created you can copy the public link to your clipboard or send it through email.³

There's also an « embedding code » that provides an HTML iframe to embed your calendar into public pages.⁴

Multiple calendars can be shared together by adding their unique tokens to the end of an embed link. Individual tokens can be found at the end of each calendar's public link. The full address will look like `https://cloud.example.com/index.php/apps/calendar/embed/<token1>-<token2>-<token3>`⁵

To change the default view or date of an embedded calendar, you need to provide an url that look like `https://cloud.example.com/index.php/apps/calendar/embed/<token>/<view>/<date>`. In this url you need to replace the following variables:⁶

- <token> with the calendar's token.⁷
- <view> with one of month, week, day, listMonth, listWeek, listDay. The default view is month and the normally used list is listMonth.
- <date> with now or any date with the following format <year>-<month>-<day> (e.g. 2019-12-28).

On the public page, users are able to get the subscription link for the calendar and download the whole calendar⁸ directly.

Subscribe to a Calendar⁹

You can subscribe to iCal calendars directly inside of your Nextcloud. By supporting this interoperable standard (RFC 5545) we made Nextcloud calendar compatible to Google Calendar, Apple iCloud and many other calendar-servers you can exchange your calendars with, including subscription links from calendar published on other Nextcloud instances, as described above.¹⁰

1. Click on + New Subscription in the left sidebar.¹¹
2. Type in or paste the link of the shared calendar you want to subscribe to.

Finished. Your calendar subscriptions will be updated regularly.¹²

Note: Subscriptions are refreshed every week by default. Your admin may have changed this setting.¹³

5.2.2 Managing Events¹⁴

Create a new event¹⁵

Events can be created by clicking in the area when the event is scheduled. In the day- and week-view of the calendar¹⁶ you just click, pull and left your cursor over the area when the event is taking place.

The month-view only requires a single click into the area of the specific day.¹⁷

After that, you can type in the event's name (e.g. **Meeting with Lukas**), choose the calendar in which you want to choose the event (e.g. **Personal, Work**), check and concretize the time span or set the event as all-day event. 1

If you want to edit advanced details such as the **Location**, a **Description**, **Attendees**, **Reminders** or to set the event as a repeating-event click on the **More...**-button to open the advanced sidebar-editor. 2

Note: If you always want to open the advanced sidebar-editor instead of the simple event editor popup, you can set a 3 Skip simple event editor-checkmark in the **Settings & Import**-section of the app.

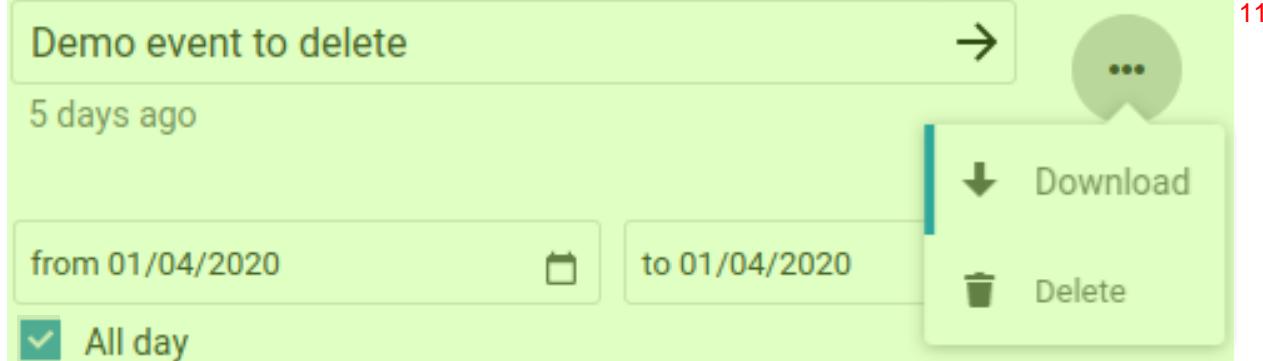
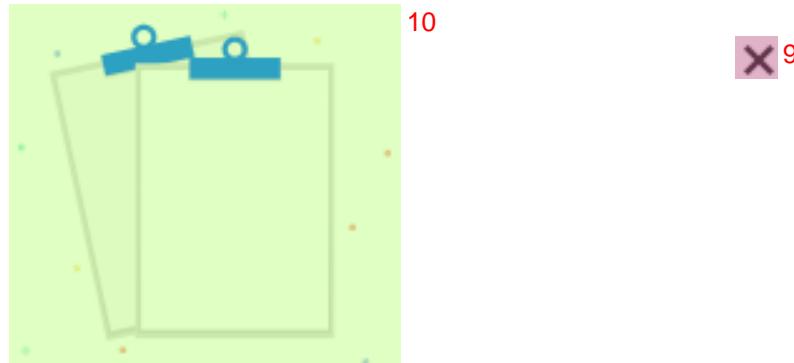
Clicking on the blue **Create**-button will finally create the event. 4

Edit or Delete an event 5

If you want to edit or delete a specific event, you just need to click on it. After that you will be able to re-set all event details and open the advanced sidebar-editor by clicking on **More**. 6

Clicking on the **Update**-button will update the event. To cancel your changes, click on the close icon on top right of the 7 the popup or sidebar editor.

If you open the sidebar view and click the three dot menu next to the event name, you have an option to export the 8 event as an **.ics** file or remove the event from your calendar.



Invite attendees to an event 1

You may add attendees to an event to let them know they're invited. They will receive an email confirmation and 2 will be able to confirm or cancel their participation to the event. Attendees may be other users on your Nextcloud instances, contacts in your addressbooks and direct email addresses. You also may change the level of participation per-attendees, or disable email confirmation for a specific attendee.

The screenshot shows the 'Attendees' tab of the Nextcloud Calendar app. At the top, there are tabs for 'Details', 'Attendees' (which is selected and highlighted in green), 'Reminders', and 'Repeat'. Below the tabs is a search bar with placeholder text: 'Search for e-mails, users, contacts, resources or rooms'. Under the search bar, there are two entries: 'Tiberius Augustus(organizer)' and 'claudius.drusus@nextcloud.local'. To the right of the second entry is a grey button with three dots. A context menu is open for the second entry, listing the following options:

- Send e-mail
- Chairperson
- Required participant
- Optional participant
- Non-participant
- ✖ Remove attendee

Tip: When adding other Nextcloud users as attendees to an event, you may access their FreeBusy information if it's 4 available, helping you to determine when is the best time slot for your event.

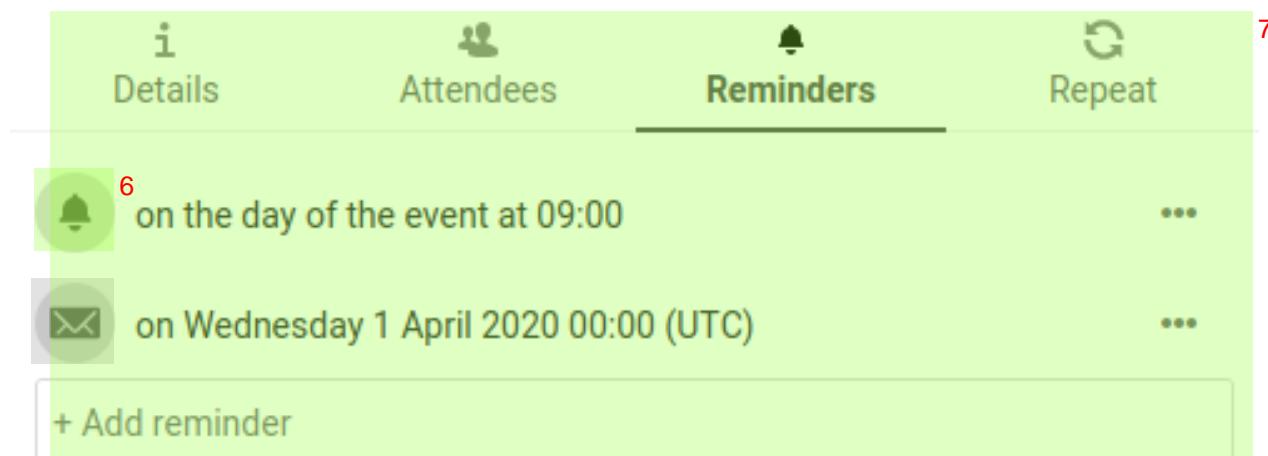
Attention: Only the calendar owner can send out invitations, the sharees are not able to do that, whether they have write access to the event's calendar or not.¹

Setup Reminders ²

You can set up reminders to be notified before an event occurs. Currently supported notification methods are : ³

- Email notifications ⁴
- Nextcloud notifications

You may set reminders at a time relative to the event or at a specific date. ⁵



Note: Only the calendar owner and people or groups with whom the calendar is shared with write access will get ⁸ notifications. If you don't get any notifications but think you should, your Administrator could also have disabled this for your server.

Note: If you synchronize your calendar with mobile devices or other 3rd-party clients, notifications may also show ⁹ up there.

Add recurring options ¹⁰

An event may be set as “recurring”, so that it can happen every day, week, month or year. Specific rules can be added ¹¹ to set which day of the week the event happens or more complex rules, such as every fourth Wednesday of each month.

You can also tell when the recurrence ends. ¹²

5.2.3 Birthday calendar ¹³

The birthday calendar is a auto-generated calendar which will automatically fetch the birthdays from your contacts. ¹⁴ The only way to edit this calendar is by filing your contacts with birthday dates. You can not directly edit this calendar

Details	Attendees	Reminders	Repeat																																			
Repeat every		1	month																																			
<input type="radio"/> By day of the month 2 <table border="1" style="margin-top: 10px;"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td></tr> <tr><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td></tr> <tr><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td></tr> <tr><td>29</td><td>30</td><td>31</td><td colspan="4"></td></tr> </table> 3				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	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																																
29	30	31																																				
<input checked="" type="radio"/> On the 4 <table border="1" style="margin-top: 10px;"> <tr><td>fourth</td><td>Wednesday</td></tr> </table>				fourth	Wednesday																																	
fourth	Wednesday																																					
End repeat		never 5																																				
Summary: 6		Monthly on the fourth Wednesday 7																																				

from the calendar-app.¹

Note: If you do not see the birthday calendar, your Administrator may have disabled this for your server.²

5.3 Synchronizing with Android³

5.3.1 Files and notifications⁴

1. Install the Nextcloud Android client from Google Play Store or from F-Droid.⁵
2. Start the app. There are two ways of setting it up:⁶

Either: enter your server URL, continue, enter your user name and password and confirm to grant access.⁷

Or: In Nextcloud's web GUI, go to the user preferences, go to **Security**. Generate an App password, click "Generate QR code" and tap the QR scanner icon in the Nextcloud app, point your phone's camera towards the screen.⁸

5.3.2 Contacts and Calendar⁹

With the Nextcloud mobile app¹⁰

1. Install DAVx⁵ (formerly known as DAVDroid) on your Android device, from Google Play Store or from F-Droid.
2. In the Nextcloud mobile, go to **Settings / More**, tap on "**Sync calendars & contacts**".
3. Now, DAVx⁵ will open Nextcloud's Webflow login window, where you will have to enter your credentials and grant access.
4. DAVx⁵ will open and ask you to create an account. Set the account name to one of your choosing, and set **Contact Group Method to Groups are per-contact categories**.
5. After this, DAVx⁵ will close and the Nextcloud app reappears. In order to finish setup, you have to manually launch DAVx⁵ again.
6. Tap on the icon for the account DAVx⁵ has just created, when requested grant DAVx⁵ access to your calendars and contacts. Optionally install **OpenTasks** and grant DAVx⁵ access to your tasks, too.
7. When you tap the icon for the account DAVx⁵ has set up, it will discover the available address books and calendars. Choose which ones you want to synchronize and finish.

Without the Nextcloud mobile app¹²

If you don't want to install the Nextcloud mobile app, the following steps are required:¹³

1. Install DAVx⁵ (formerly known as DAVDroid) on your Android device, from Google Play Store or from F-Droid.
2. Optionally install **OpenTasks**.
3. Create a new account ("+" button).
4. Select **Connection with URL and username**. **Base URL:** URL of your Nextcloud instance (e.g. <https://sub.example.com/remote.php/dav>) and **Contact Group Method:** as credentials.

5. Choose the option Groups are per-contact categories. 1
6. Click **Connect**.
7. Select the data you want to sync.
8. When requested, grant access permissions to DAVx⁵ for your contacts, calendars and optionally tasks.

Note: Enter your email address as DAVx⁵ account name (mandatory if you want to be able to send calendar invitation). 2
If your email address is registered in your Nextcloud preferences and you have set up your account using the Nextcloud mobile app, this all should be already the case.

Tip: DAVx⁵ lists the calendar subscriptions made through the Nextcloud Calendar app, but you need to install the ICSx⁵ (formerly known as ICSDroid) app on your Android device, from the Google Play Store or from F-Droid to sync them. 3

5.4 Synchronizing with iOS 4

5.4.1 Calendar 5

1. Open the settings application. 6
2. Select Calendar.
3. Select Accounts.
4. Select Add Account.
5. Select Other as account type.
6. Select Add CalDAV account.
7. For server, type the domain name of your server i.e. example.com.
8. Enter your user name and password.
9. Select Next.

Your calendar will now be visible in the Calendar application. 7

Note: Beginning with iOS 12 an SSL encryption is necessary. Therefore do **not** disable SSL (For this reason a certificate is required at your domain, <https://letsencrypt.org/> will do). 8

5.4.2 Contacts 9

1. Open the settings application. 10
2. Select Contacts.
3. Select Accounts.
4. Select Add Account.
5. Select Other as account type.

6. Select Add CardDAV account. 2
7. For server, type the domain name of your server i.e. example.com.
8. Enter your user name and password.
9. Select Next.

You should now find your contacts in the address book of your iPhone. 3

Note: Beginning with iOS 12 an SSL encryption is necessary. Therefore do **not** disable **SSL** (For this reason a certificate is required at your domain, <https://letsencrypt.org/> will do). 4

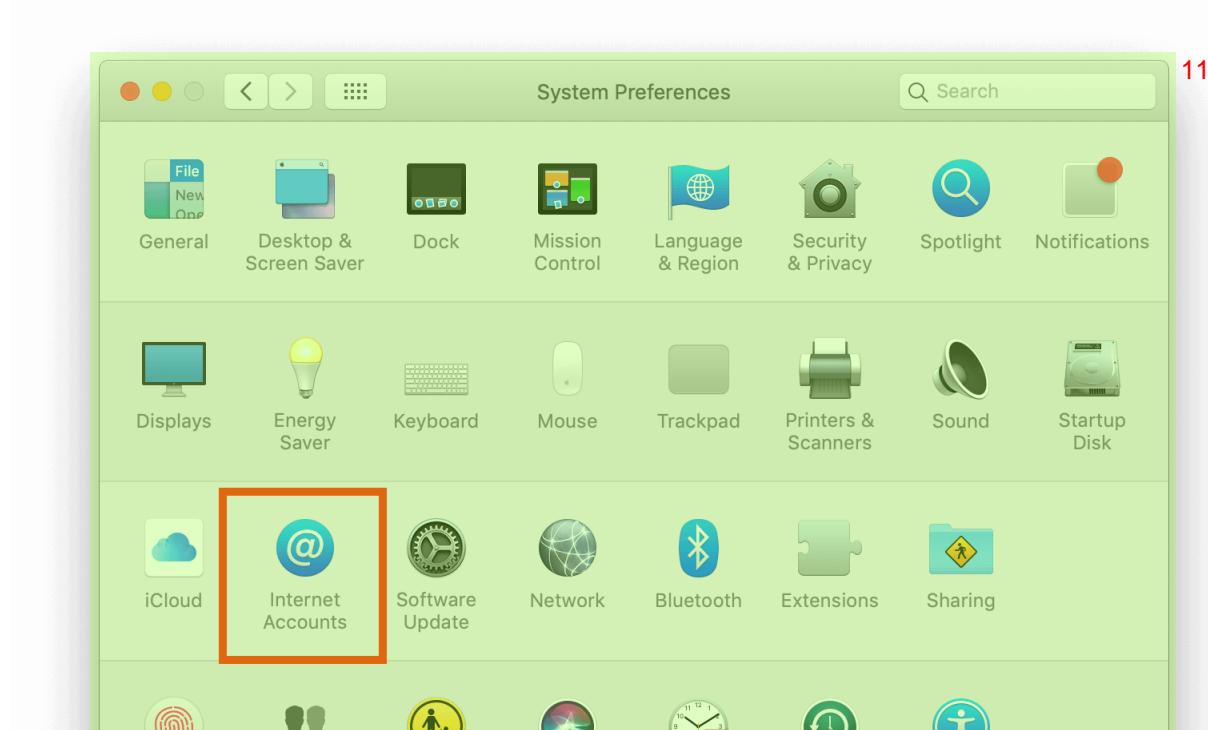
If it's still not working, have a look at the Troubleshooting Contacts & Calendar guide. 5

5.5 Synchronizing with macOS 6

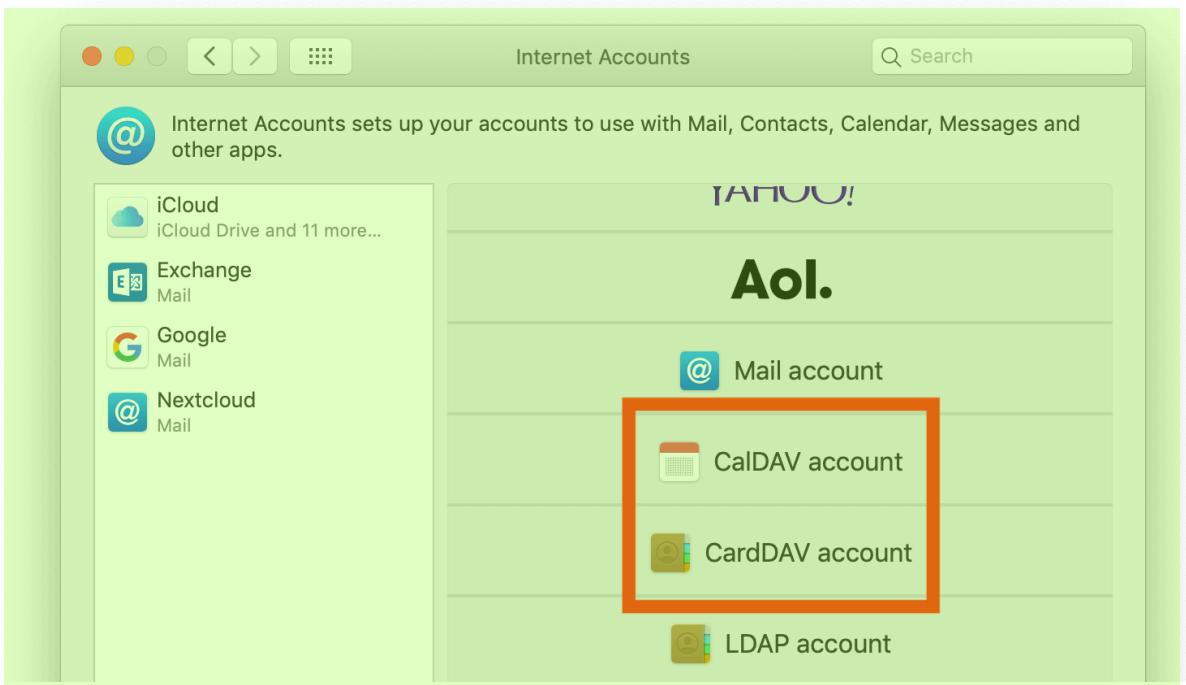
5.5.1 Setup your Accounts 7

In the following steps you will add your server resources for **CalDAV** (Calendar) and **CardDAV** (Contacts) to your 8 Nextcloud.

1. Open the **system preferences** of your macOS device. 9
2. Navigate to **Internet Accounts**: 10



3. Click on **Add Other Account...** and click on **CalDAV Account** for Calendar or **CardDAV Account** for 12 Contacts:



Note: You can not setup Calendar/Contacts together. You need to setup them in **separate accounts**. 2

4. Select **Manual** as Account-Type and type in your respective credentials: 3

Username: Your Nextcloud username or email 4

Password: Your generated app-password/token (Learn more). 5

Server Address: URL of your Nextcloud server (e.g. <https://cloud.example.com>) 6

5. Click on **Sign In**. 7

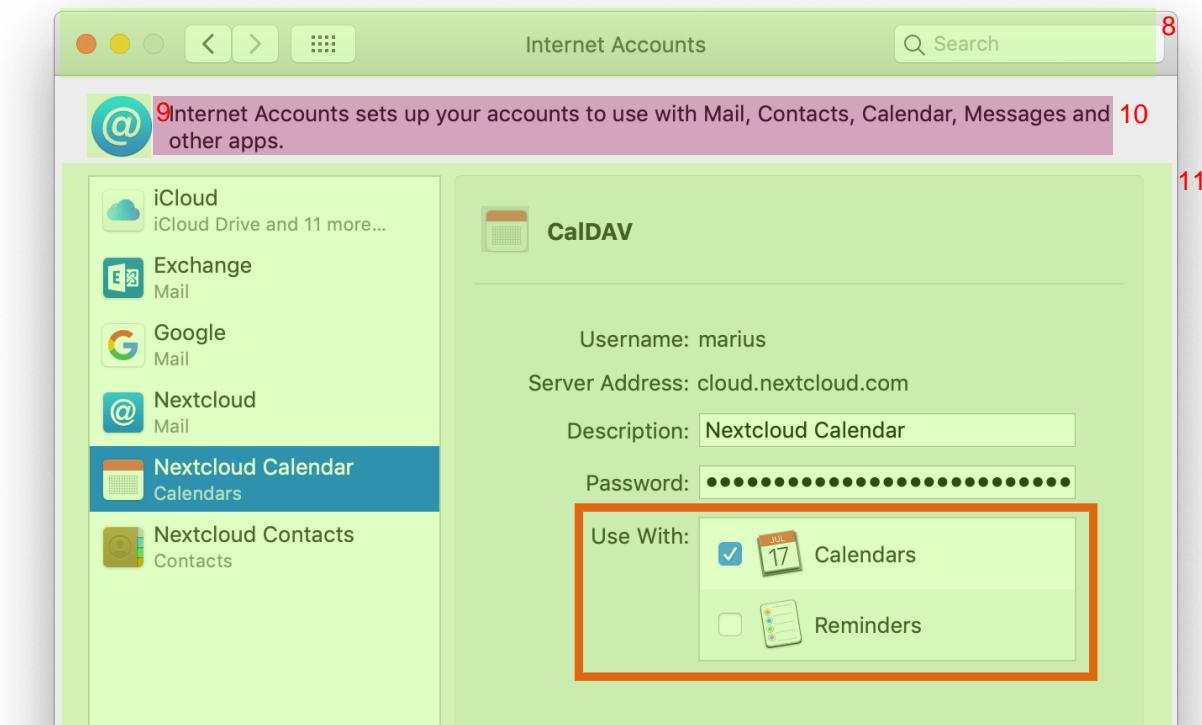
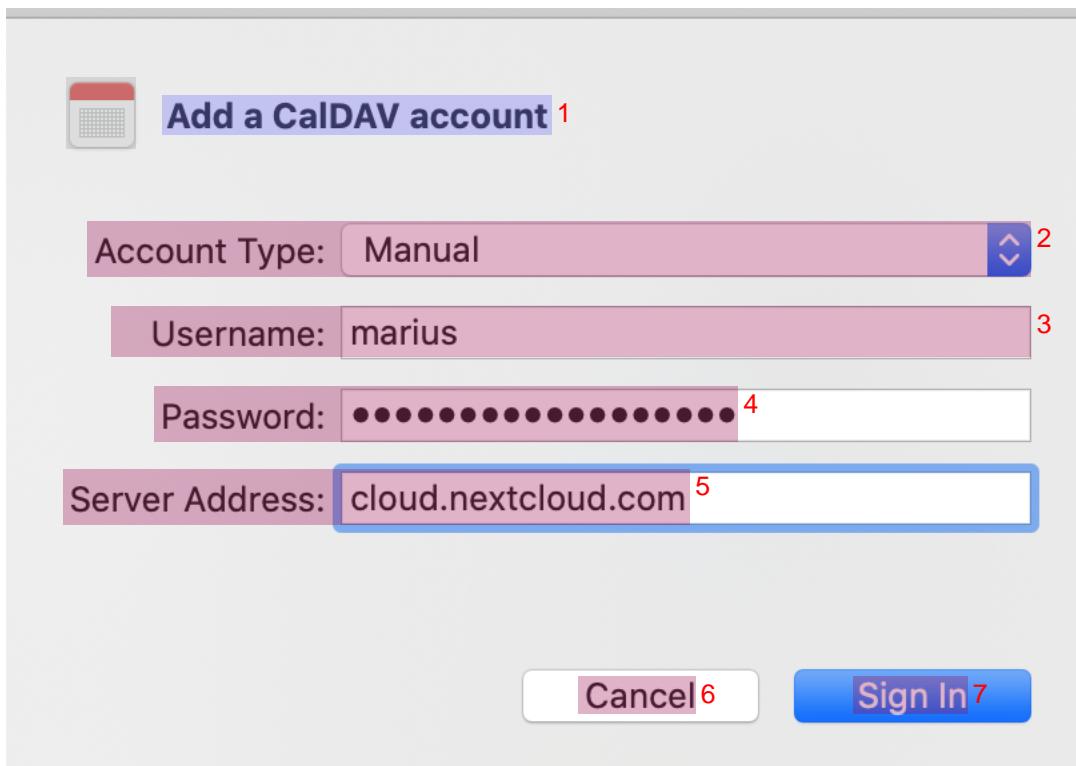
For **CalDAV (Calendar)**: You can now select, with which applications you want to use this resource. In the most 8 cases, this will be the “Calendar” application, sometimes you may also want to use it for your **Tasks and reminders**.

5.5.2 Troubleshooting 9

- macOS does **not** support syncing CalDAV/CardDAV over non-encrypted `http://` connections. Make sure 10 you have `https://` enabled and configured on server- and client-side.
- Self-signed certificates** need to be properly set up in the macOS keychain.

5.6 Synchronizing with Thunderbird 11

Thunderbird is a feature-rich and mature mail client that can be turned into a full-fledged PIM. However, it lacks 12 support for address book synchronisation via CardDAV and it also lacks the ability to automatically discover calendars and address books available on the server. Therefore, to synchronise with Nextcloud, add-ons are required, which can be easily installed through Thunderbird’s add-on manager.



5.6.1 Recommended method ¹

For this method, you need to have three add-ons installed: ²

1. The [Lightning calendar](#) (Only needed for Thunderbird versions up to 68). ³
2. [TbSync](#).
3. The [TbSync provider for CalDAV and CardDAV](#).

When they are installed, if you are on Windows, go to [Extras/Synchronisation settings \(TbSync\)](#) or ⁴
[Edit/Synchronisation settings \(TbSync\)](#) if on Linux, and then:

- In the account manager choose “[Add account / CalDAV / CardDAV account](#)” ⁵
- In the next window, go with the default called **Automatic configuration** and click **next**
- Enter an **account name**, which you can freely choose, **user name**, **password** and the **URL of your server** and click **next**
- In the next window, TbSync should have autodiscovered the CalDAV and CardDAV addresses. When it has, click **Finish**
- Now check the box **Enable and synchronize this account**. TbSync will discover all address books and calendars your account has access to on the server
- Check the box next to each calendar and address book you want to have synchronised, also set how often you want them to be synchronised and push the button **synchronize now**
- After the first successful synchronisation is complete, you can close the window. Henceforth, TbSync will do the work for you. You are done and can skip the next sections (unless you need a more advanced address book)

5.6.2 Alternative: Using the CardBook add-on (Contacts only) ⁶

CardBook is an advanced alternative to Thunderbird’s address book, which supports CardDAV. You can have TbSync ⁷ and CardBook installed in parallel.

1. Click the CardBook icon in the upper right corner of Thunderbird: ⁸



2. In CardBook:

- “Address book > New Address book **Remote** > Next
- Select **CardDAV**, fill in the address of your Nextcloud server, your user name and password

Add a new address book 1

Type and location of the new remote address book.

Type
 What is the type of your remote address book ?: (Caution: Google does NOT conform to vCard standards)

CardDAV
 Google
 Apple

Connection
 For a CardDAV type, enter the URL of your remote address book. You may try to use a partial URL (example : http(s)://carddav.example.org). For a Google address book, don't specify this field.

URL

Enter the credentials for accessing your address book. For a Google address book, the username should be your Google email.

Username
 Password Show

4. Click on “Validate”, click Next, then choose the name of the address book and click Next again: 2

Add a new address book 3

Add a new address book
 Address book properties

Name

Color

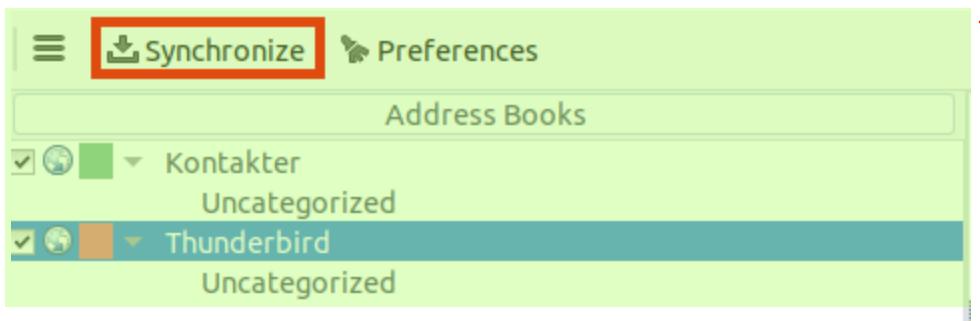
vCard

Expected date format

Read-only mode

Use urn:uuid

5. When you are finished, CardBook synchronizes your address books. You can always trigger a synchronisation 4 manually by clicking “Synchronise” in the top left corner of CardBook:



5.6.3 The old method: Manually subscribing to calendars²

This method is only needed if you don't want to install TBSync. ³

1. Go to your Nextcloud Calendar and click on the 3 dotted menu for the calendar that you want to synchronize ⁴ which will display an URL that looks something like this:
`https://cloud.nextcloud.com/remote.php/dav/calendars/daniel/personal/`
2. Go to the calendar view in Thunderbird and right click in the calendar menu to the left (where the names of the calendars are) to add a **New Calendar**.
3. Choose **On the Network:** ⁵

Create New Calendar ×

Create a new calendar

Locate your calendar

Your calendar can be stored on your computer or be stored on a server in order to access it remotely or share it with your friends or co-workers.

On My Computer

On the Network

Cancel Next

4. Choose **CalDAV** and fill in the missing information: 2

Create a new calendar

Locate your calendar

Provide info about what is needed to access your remote calendar

Format:

- iCalendar (ICS)
- CalDAV
- Sun Java System Calendar Server (WCAP)

Location:

Offline Support

[Cancel](#) [Back](#) [Next](#)

5.6.4 Fix for Thunderbird 60²

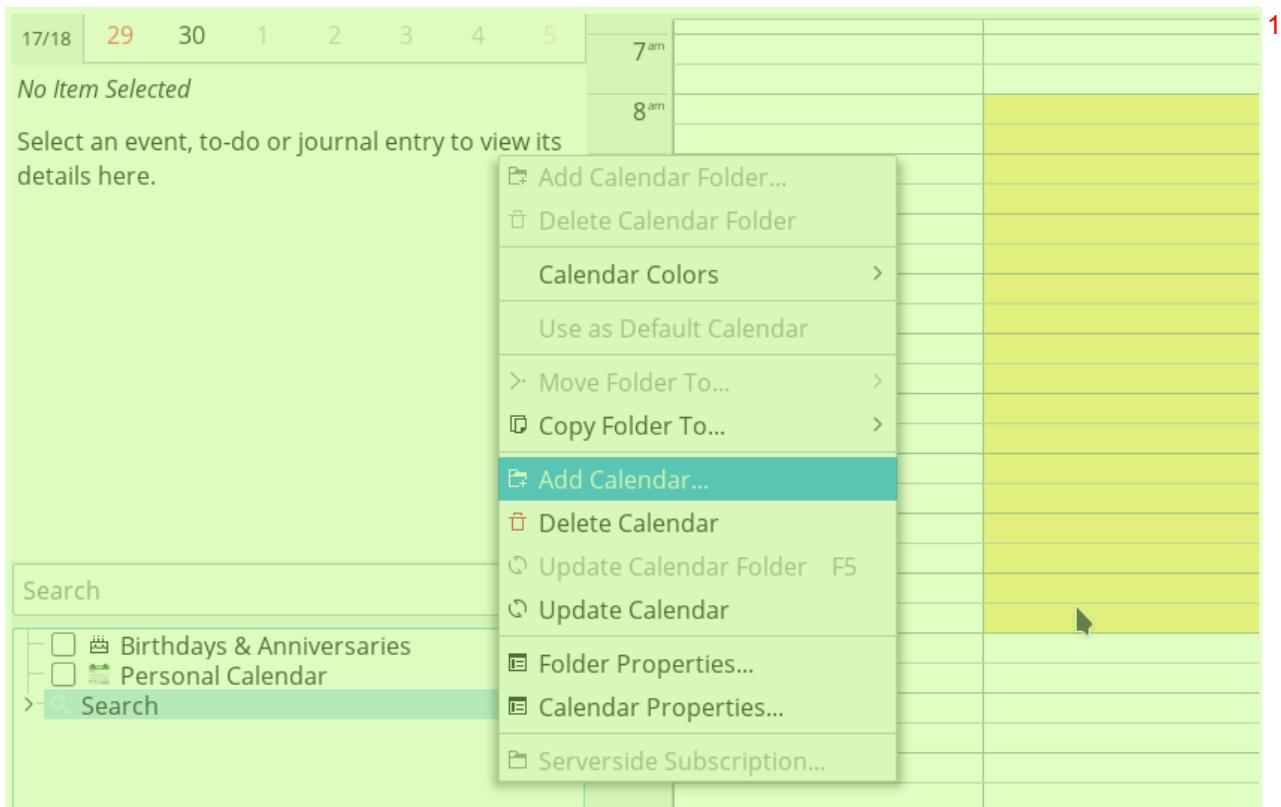
If you are still using Thunderbird 60, you need to change a configuration setting to make CalDAV/CardDAV work³ around Thunderbird bug #1468918 as described here.

5.7 Synchronizing with KDE Kontact⁴

KOrganizer and KAddressBook can synchronize your calendar, contacts and tasks with a Nextcloud server.⁵

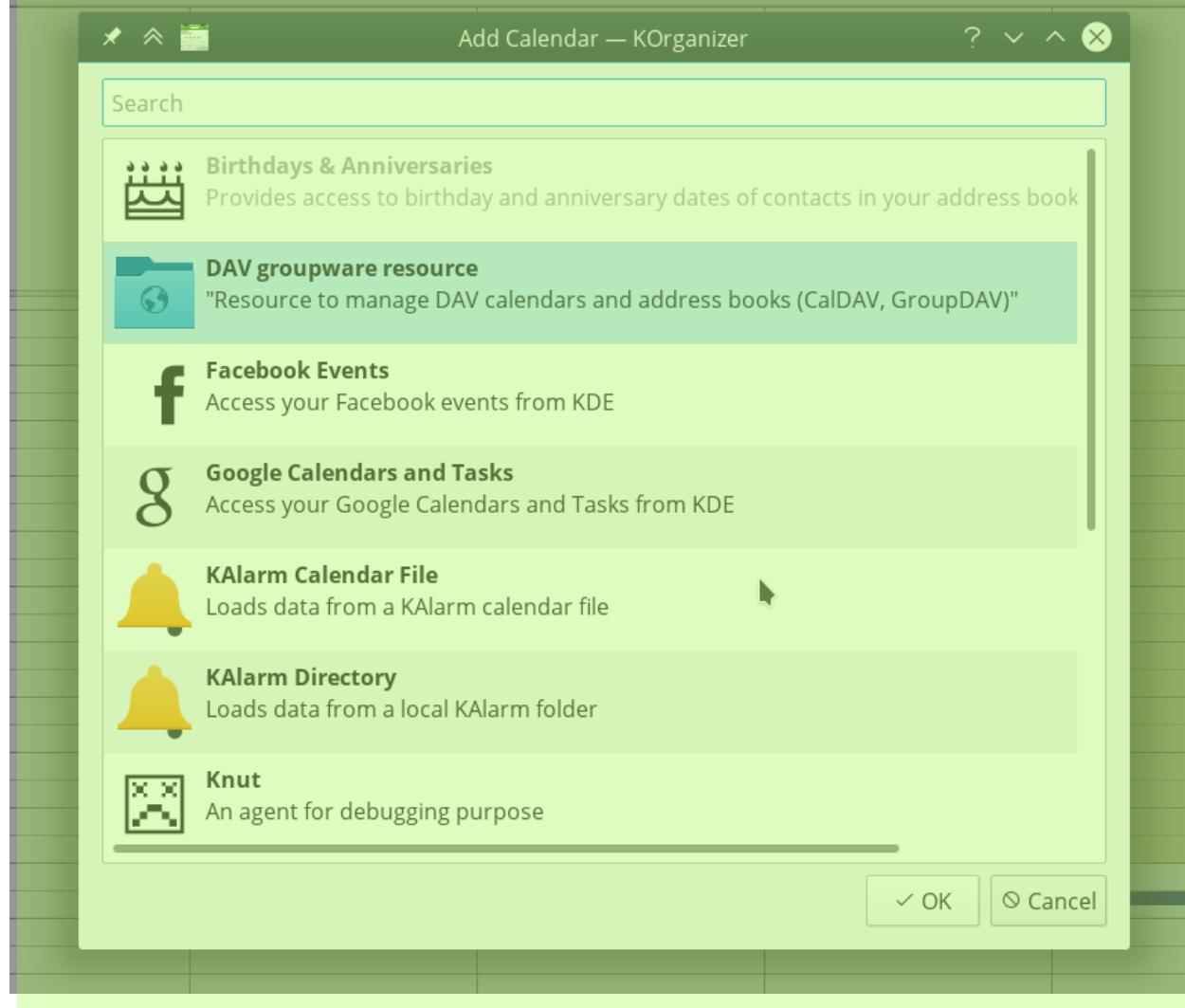
This can be done by following these steps:⁶

1. Open KOrganizer and in the calendar list (bottom left) right-click and choose Add Calendar:⁷

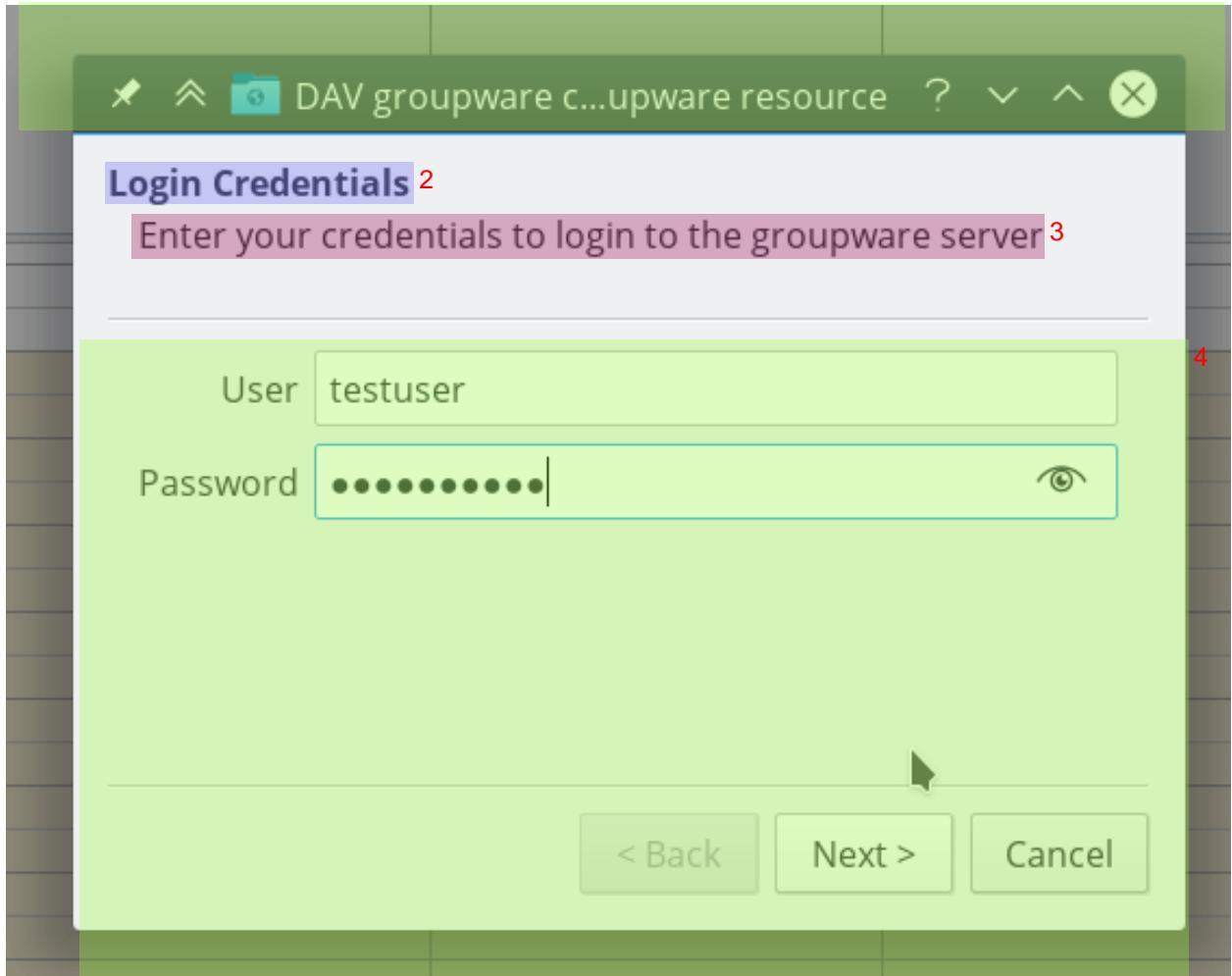


2. In the resulting list of resources, pick DAV groupware resource: 2

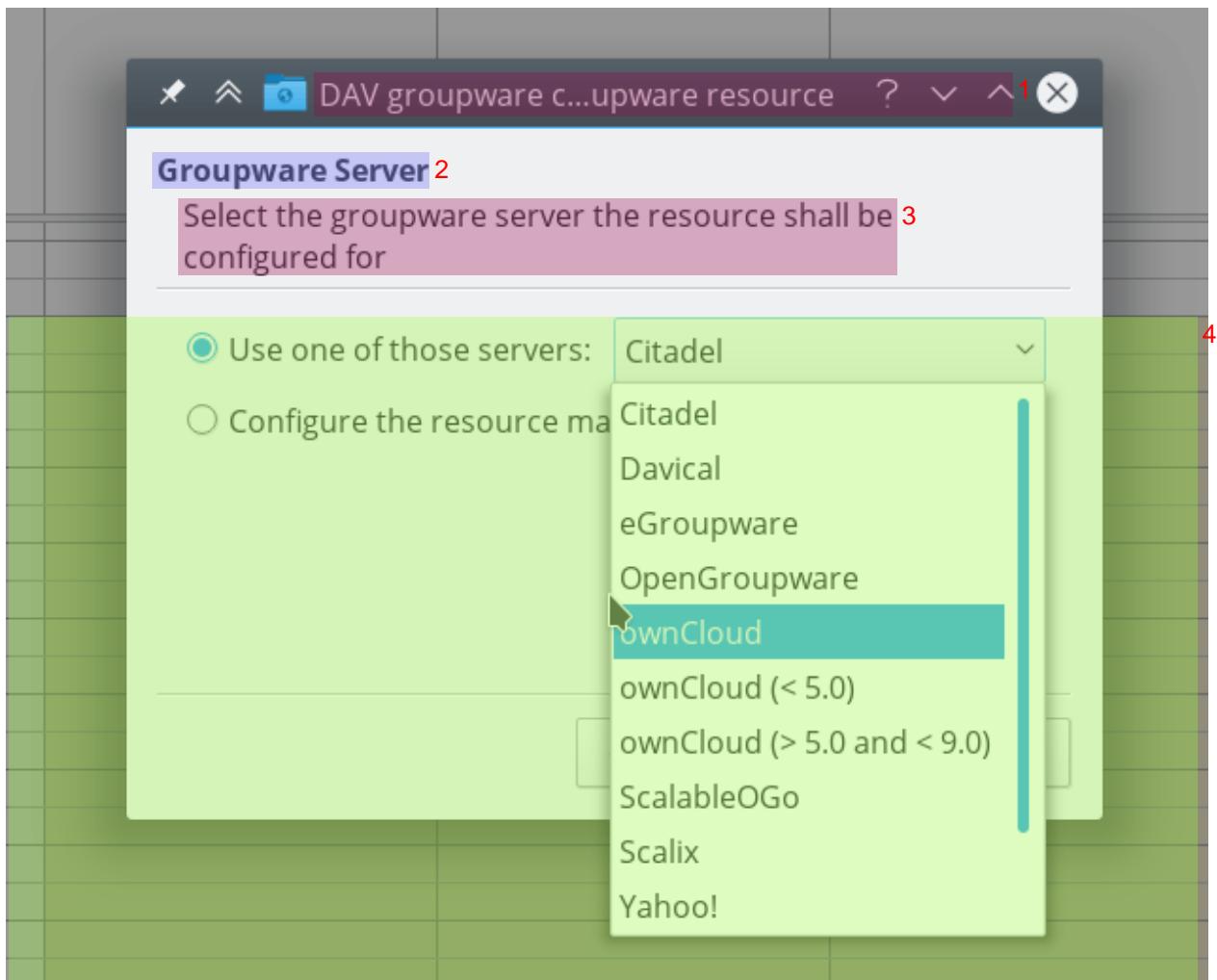
1, April 8, 2018 Monday, April 9, 2018 Tuesday, April 10, 2018 Wednesday, April 11, 2018 Thursday, April 12, 2018 1



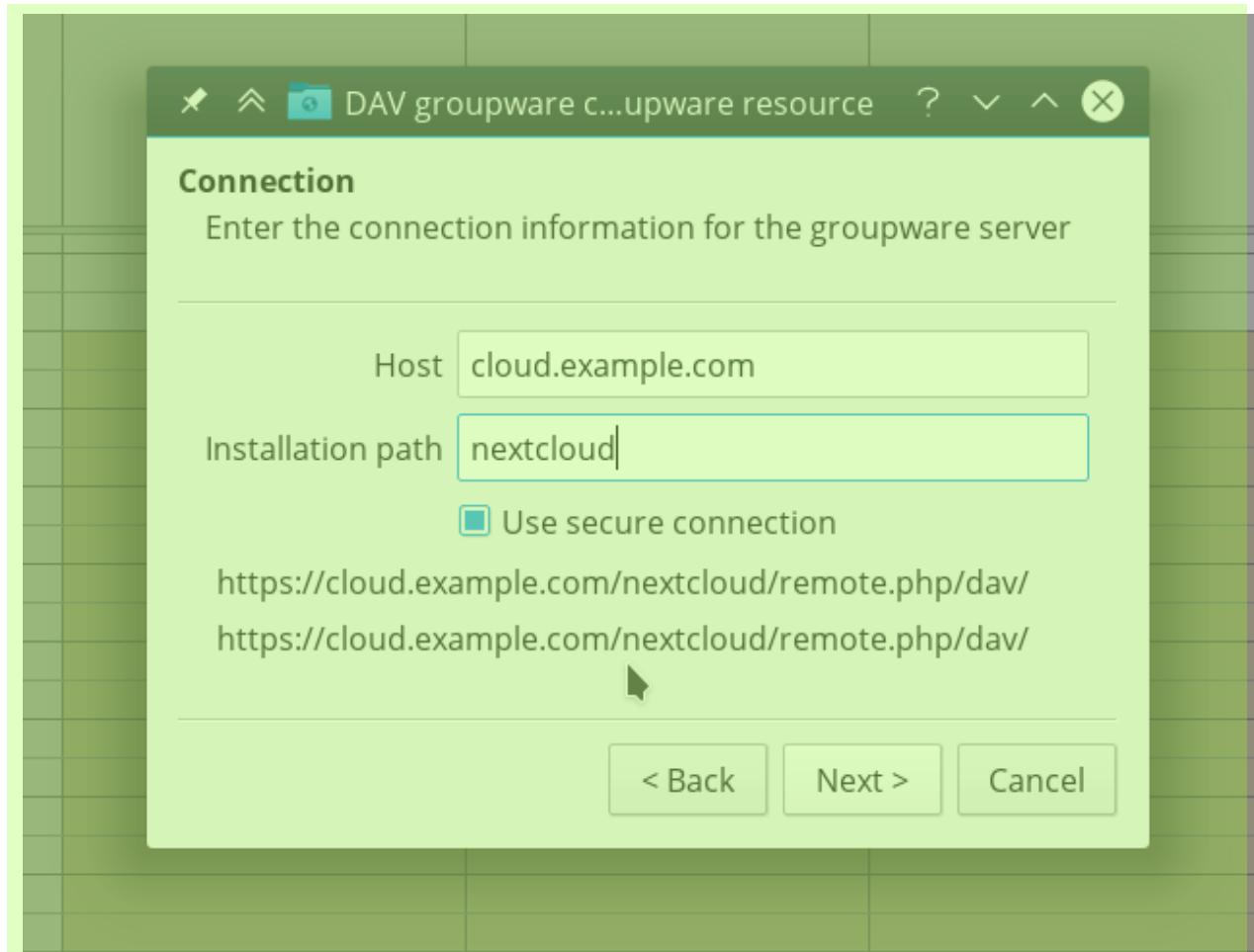
3. Enter your username. As password, you need to generate an app-password/token (Learn more): 2



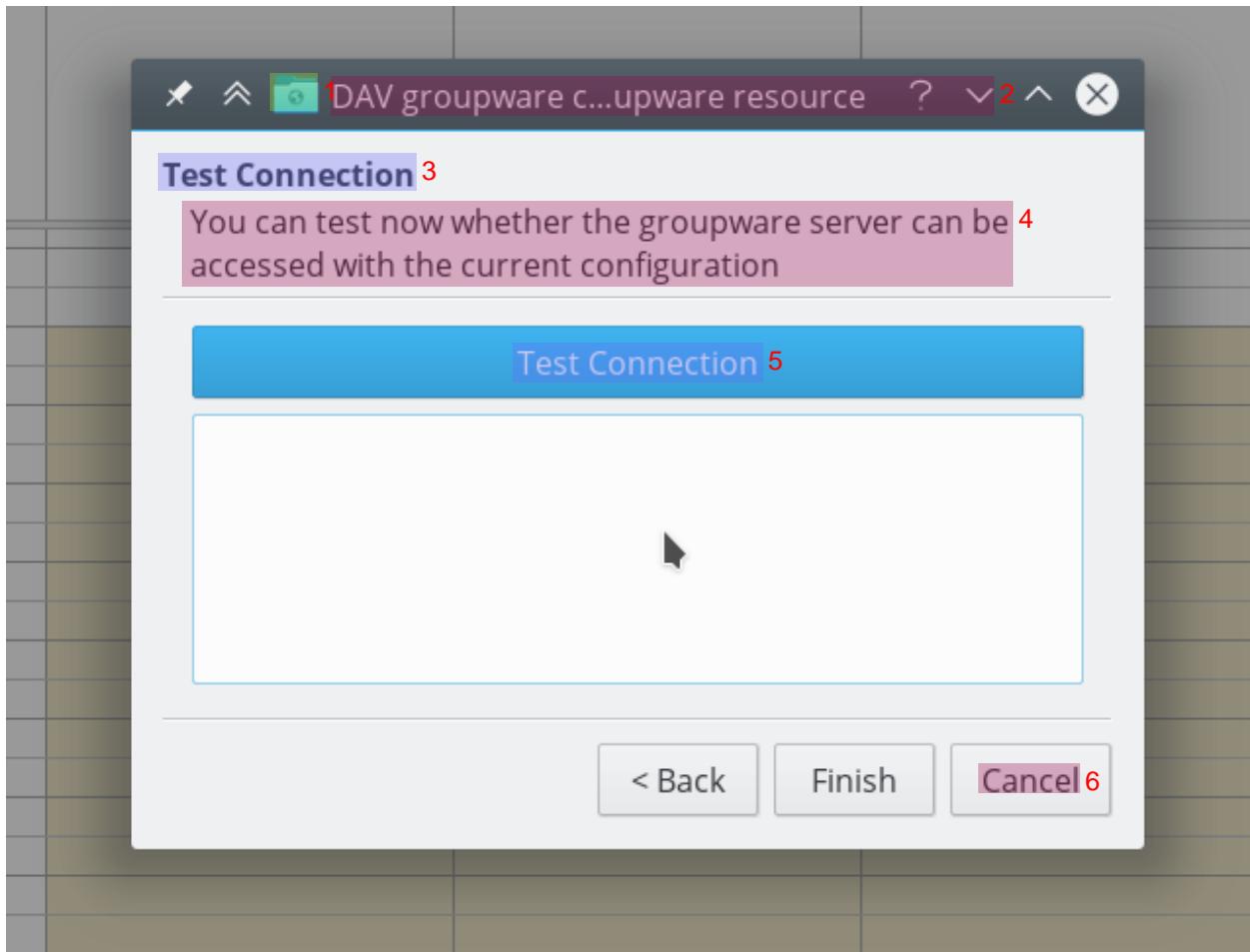
4. Choose ownCloud or Nextcloud as Groupware server option: 5

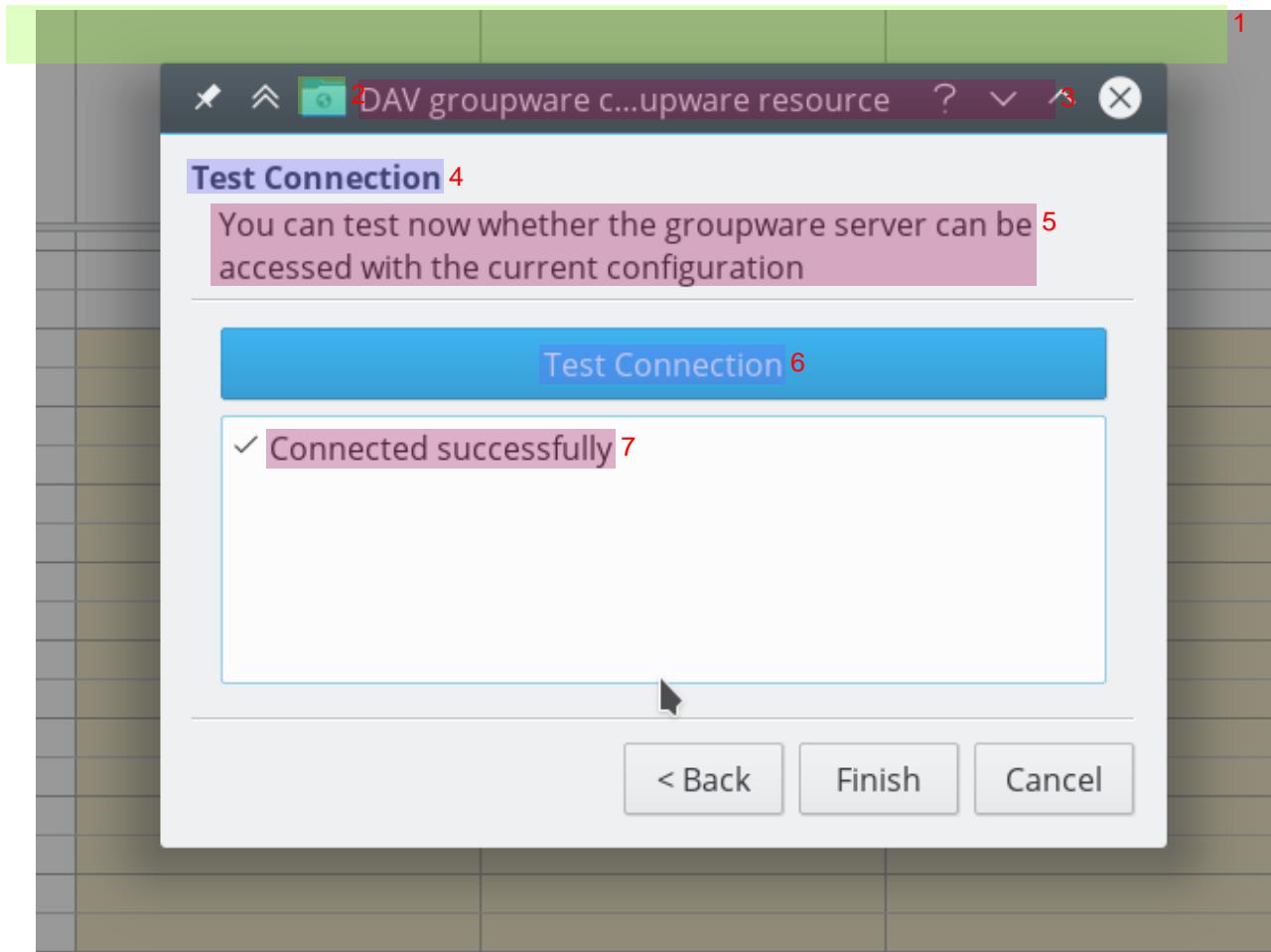


5. Enter your Nextcloud server URL and, if needed, installation path (anything that comes after the first /, for example mynextcloud in <https://example.com/mynextcloud>). Then click next:

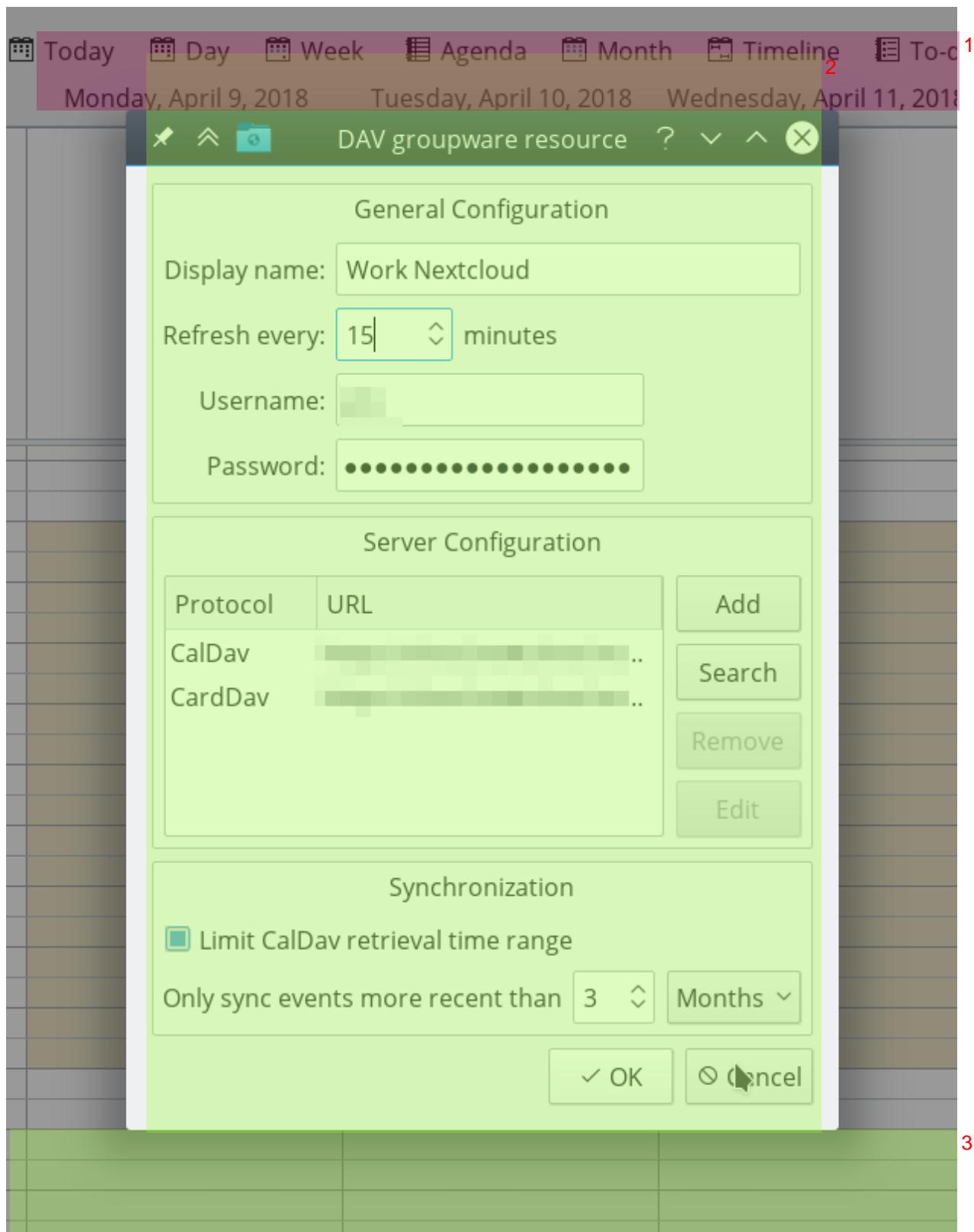


6. You can now test the connection, which can take some time for the initial connection. If it does not work, you can go back and try to fix it with other settings:





7. Pick a name for this resource, for example Work or Home. By default, both CalDAV (Calendar) and CardDAV⁸ (Contacts) are synced:



Note: You can set a manual refresh rate for your calendar and contacts resources. By default this setting is set to 45 minutes and should be fine for the most use cases. When you create a new appointment it is synced to Nextcloud 4

right away. You may want to change this for saving your power or cellular data plan, so that you can update with a right-click on the item in the calendar list.

8. After a few seconds to minutes depending on your internet connection, you will find your calendars and contacts inside the KDE Kontact applications KOrganizer and KAddressBook:

KOrganizer

File Edit View Go Actions Schedule Settings Help

Sunday, April 8, 2018 Monday, April 9, 2018 Tuesday, April 10, 2018 Wednesday, April 11, 2018 Thursday, April 12, 2018 Friday, April 13, 2018 Saturday, April 14, 2018

12/13 25 26 27 28 29 30 31
13/14 1 2 3 4 5 6 7
14/15 8 9 10 11 12 13 14
15/16 15 16 17 18 19 20 21
16/17 22 23 24 25 26 27 28
17/18 29 30 1 2 3 4 5

Merge changes from Whitepaper into Sales doc for customers

Calendar: Sales (Oliver Paroz) in Work Nextcloud

Percent done: 0%

Creation date: Monday, February 20, 2017 4:23:32 PM CET

Search

Birthdays & Anniversaries

Personal Calendar

Work

Contact birthdays

default

Personal

Vacations

Search

Monday, April 9, 2018 - Friday, April 13, 2018 Hackweek

Monday, April 9, 2018 - Friday, April 20, 2018 Vacation

Off most of the day

Sales retreat

9:45 AM - 11:45 AM

9:00 AM - 5:00 PM vacation

Weekly Marketing

11:45 AM - 1:00 PM Sales Meeting

9:45 AM - 11:45 AM

9:00 AM - 5:00 PM

2:00 PM - 4:00 PM Nextcloud 14 Planing Meeting

2:00 PM - 4:00 PM Sales Meeting

9:45 AM - 11:45 AM Weekly company's

9:10 PM

KAddressBook

File Edit View Action Tools Settings Help

+ New Contact... New Group... Edit Contact... Search...<Alt+Q> (All)

Address Books

Personal Contacts

Work

default

Name

Home

Work/Preferred

Emails

Address Book

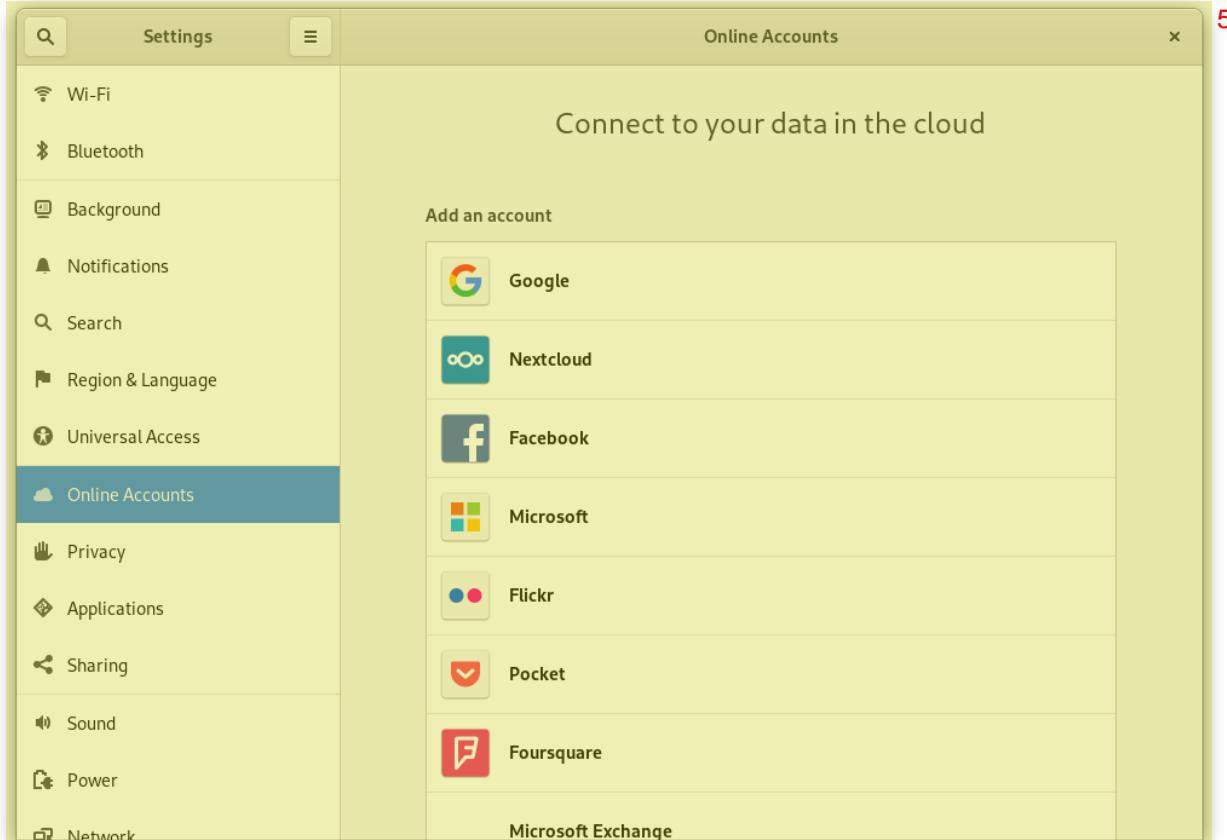
Oliver Paroz

5.8 Synchronizing with the GNOME desktop ¹

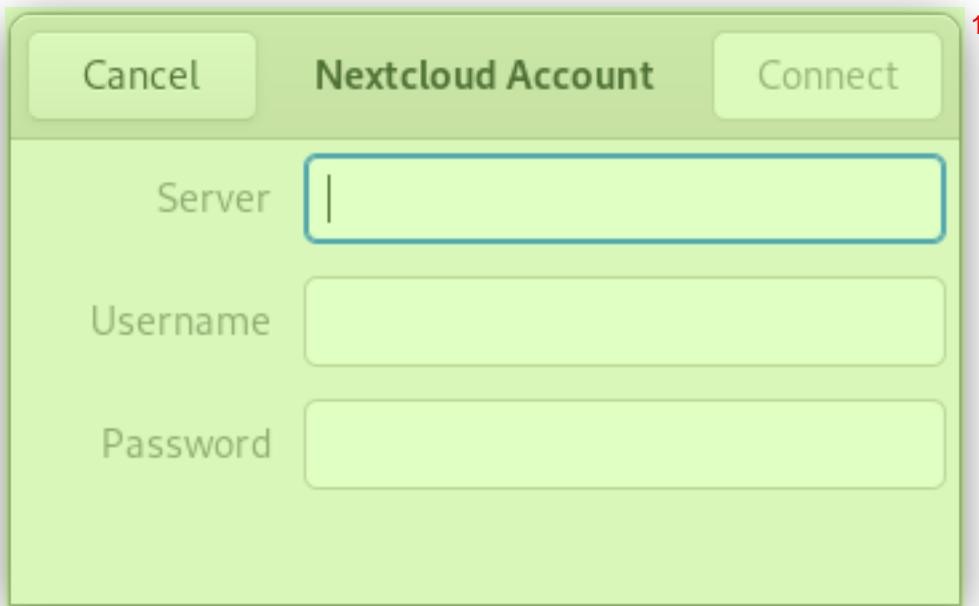
The GNOME desktop has built-in support for Nextcloud's calendar, contacts and tasks which will be displayed by the Evolution PIM or the Calendar, Tasks and Contacts app as well as for files, which it integrates into the Nautilus file manager via WebDAV. The latter works only while the computer is connected.

This can be done by following these steps: ³

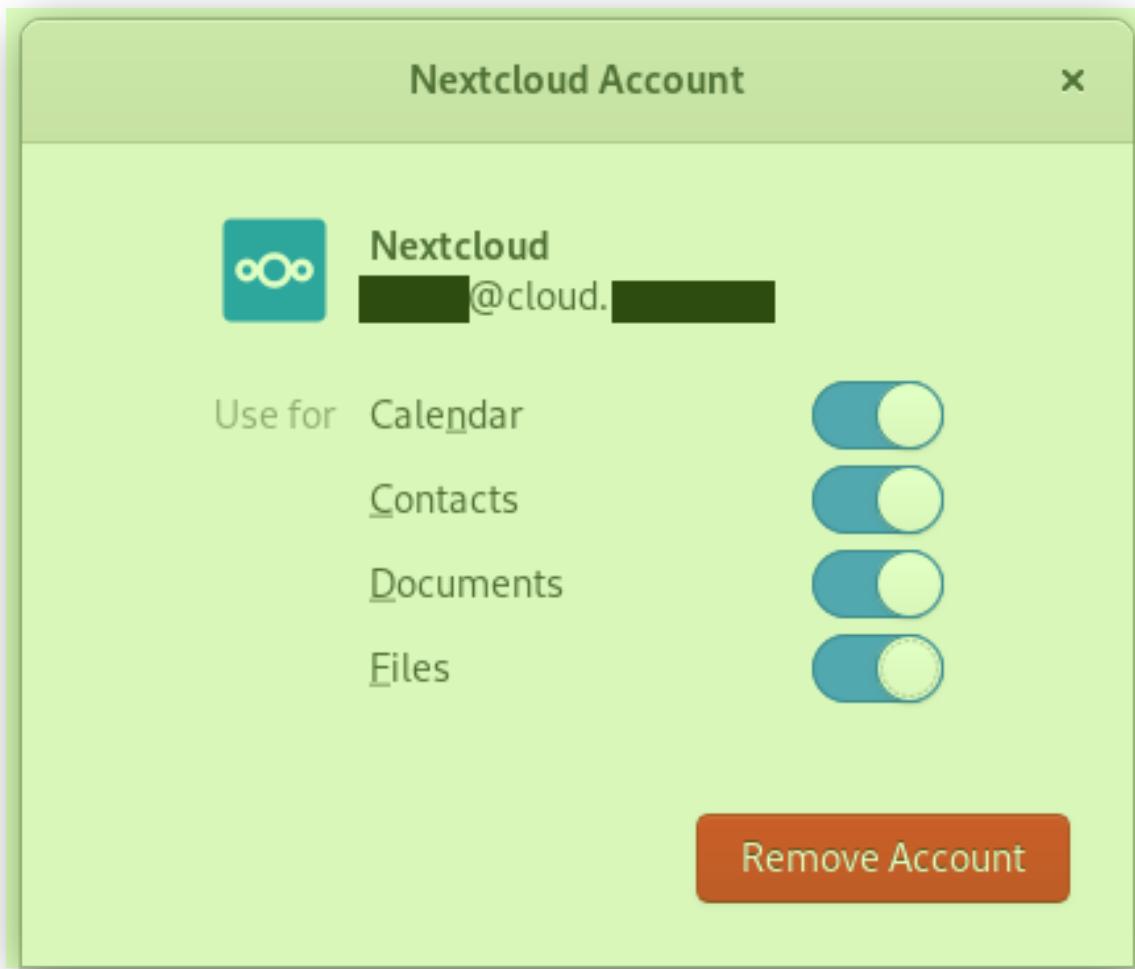
1. In the GNOME settings, open Online Accounts. ⁴
2. Under “Add an account” pick Nextcloud:



3. Enter your server URL, username and password. If you have enabled two factor authentication, you need to ⁶ generate an app-password/token, because GNOME Online Accounts doesn't support Nextcloud's webflow login yet (Learn more):



4. In the next window, select which resources GNOME should access and press the cross in the top left to close: 2



Nextcloud tasks, calendars and contacts should now be visible in the Evolution PIM, the task, contacts and calendars² app.

Files will be shown as a WebDAV resource in the Nautilus file manager (and also be available in the GNOME file³ open/save dialogues). Documents should be integrated into the GNOME Documents app.

All resources should also be searchable from anywhere by pressing the Windows key and entering a search term.⁴

5.9 Synchronizing with Windows 10⁵

5.9.1 Calendar⁶

1. In your browser, navigate to the Nextcloud Calendar app. Under “Settings & import”, copy the address using ⁷ “Copy iOS/macOS CalDAV address” into your clipboard.
2. Launch the Windows 10 Calendar app. Then, click the settings icon (gear icon) and select “Manage accounts”. ⁸
3. Click “Add account” and choose “iCloud”. ⁹

4. Enter an email, username and password. None of this information has to be valid-it will all be changed in the 1 upcoming steps.
5. Click “Done”. A message should appear indicating the settings were saved successfully. 2
6. In the “Manage Accounts” menu, click on the iCloud account created in previous steps, and select “Change settings”. Then, click on “Change mailbox sync settings”.
7. Scroll to the bottom of the dialog box, select “Advanced mailbox settings”. Paste your CalDAV URL in the field labelled “Calendar server (CalDAV)”.
8. Click “Done”. Enter your Nextcloud username and password in the appropriate fields, and change the account name to whatever you prefer (e. g. “Nextcloud Calendar”). Click “Save”.

5.9.2 Contacts 3

1. In the bottom left of the Contacts View (in Nextcloud Contacts) look for a little impeller symbol that looks like this: 4



which will display a URL that looks something like this: <https://cloud.nextcloud.com/remote.php/dav/addressbooks/> 7
`users/daniel/Thunderbird/`

2. Launch the Windows 10 People app. Then, click the settings icon (gear icon) and select “Manage accounts”. 8
3. Click “Add account” and choose “iCloud”. 9
4. Enter an email, username and password. None of this information has to be valid-it will all be changed in the upcoming steps.
5. Click “Done”. A message should appear indicating the settings were saved successfully.
6. In the “Manage Accounts” menu, click on the iCloud account created in previous steps, and select “Change settings”. Then, click on “Change mailbox sync settings”.
7. Scroll to the bottom of the dialog box, select “Advanced mailbox settings”. Paste your CalDAV URL in the field labelled “Contacts server (CalDAV)”.
8. Click “Done”. Enter your Nextcloud username and password in the appropriate fields, and change the account name to whatever you prefer (e. g. “Nextcloud Contacts”). Click “Save”.

5.9.3 Troubleshooting 11

After following all these steps, your Nextcloud calendar should synchronize. If not, check your username and password. Otherwise, repeat these steps. 12

NOTE: You will not be able to synchronize your calendar if you have two-factor authentication enabled. Follow the steps below to get an app password that can be used with the Calendar client app: 13

1. Log into Nextcloud. Click on your user icon, then click on “Settings”. 14
2. Click on “Security”, then locate a button labeled “Create new app password”. Next to this button, enter “Windows 10 Calendar app”. Then, click the button, copy and paste the password. Use this password instead of your Nextcloud password for Step 8.

Special thanks to this Reddit user for their post: https://www.reddit.com/r/Nextcloud/comments/5rcypb/using_the_windows_10_calendar_application_with/ 15

5.9.4 Contacts¹

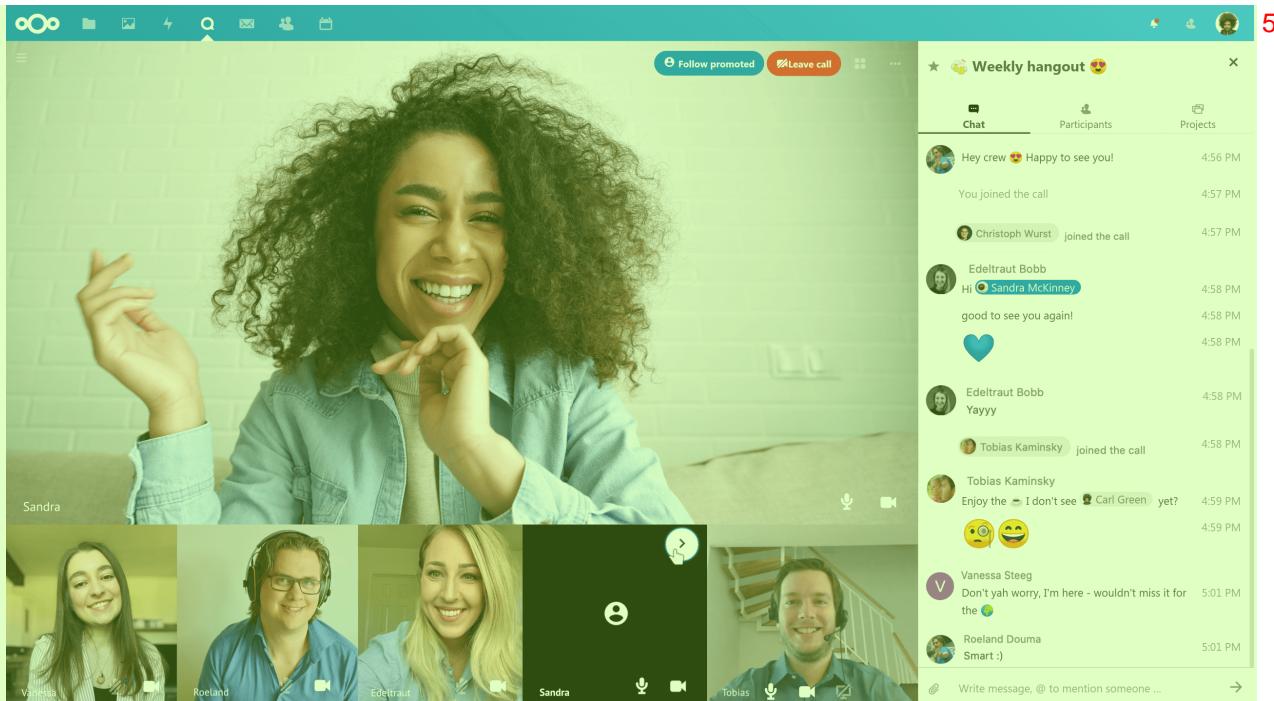
1. Repeat steps 1 - 7 from the Calendar instructions. If you already have setup the Calendar synchronization, you can use the same account for this.
2. In the “Advanced mailbox settings” paste your CalDAV URL in the field labelled “Contacts server (CardDAV)”.
3. Replace the path “principals” within the URL with “addressbooks”.
4. Click “Done”. Enter your Nextcloud username and password in the appropriate fields, and change the account name to whatever you prefer (e. g. “Nextcloud”). Click “Save”.

CHAPTER 6¹

Talk²

Nextcloud Talk offers audio/video and text chat integrated in Nextcloud. It offers a web interface as well as mobile apps.³

You can find out more about Nextcloud Talk on our website.⁴



6.1 Basics of Nextcloud Talk⁶

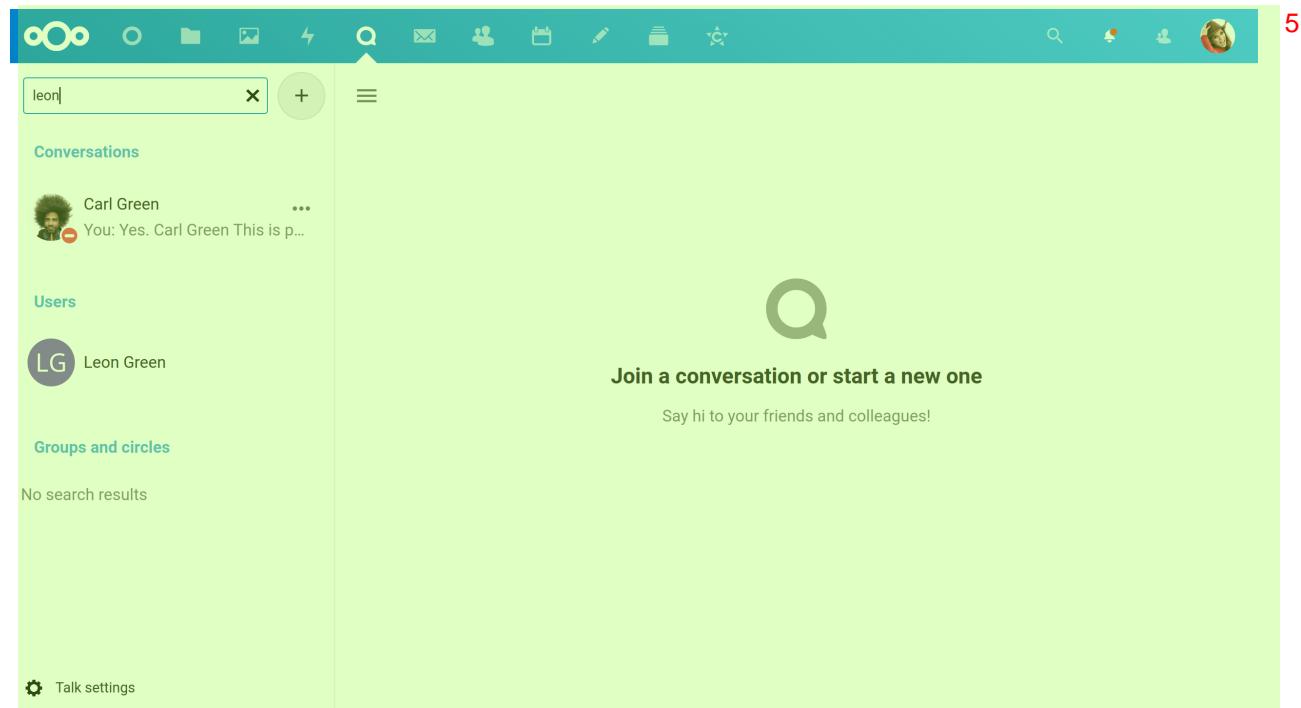
Nextcloud Talk lets you chat and have video calls on your own server.⁷

Chats and calls take place in conversations. You can create any number of conversations. There are two kinds of conversations: 1

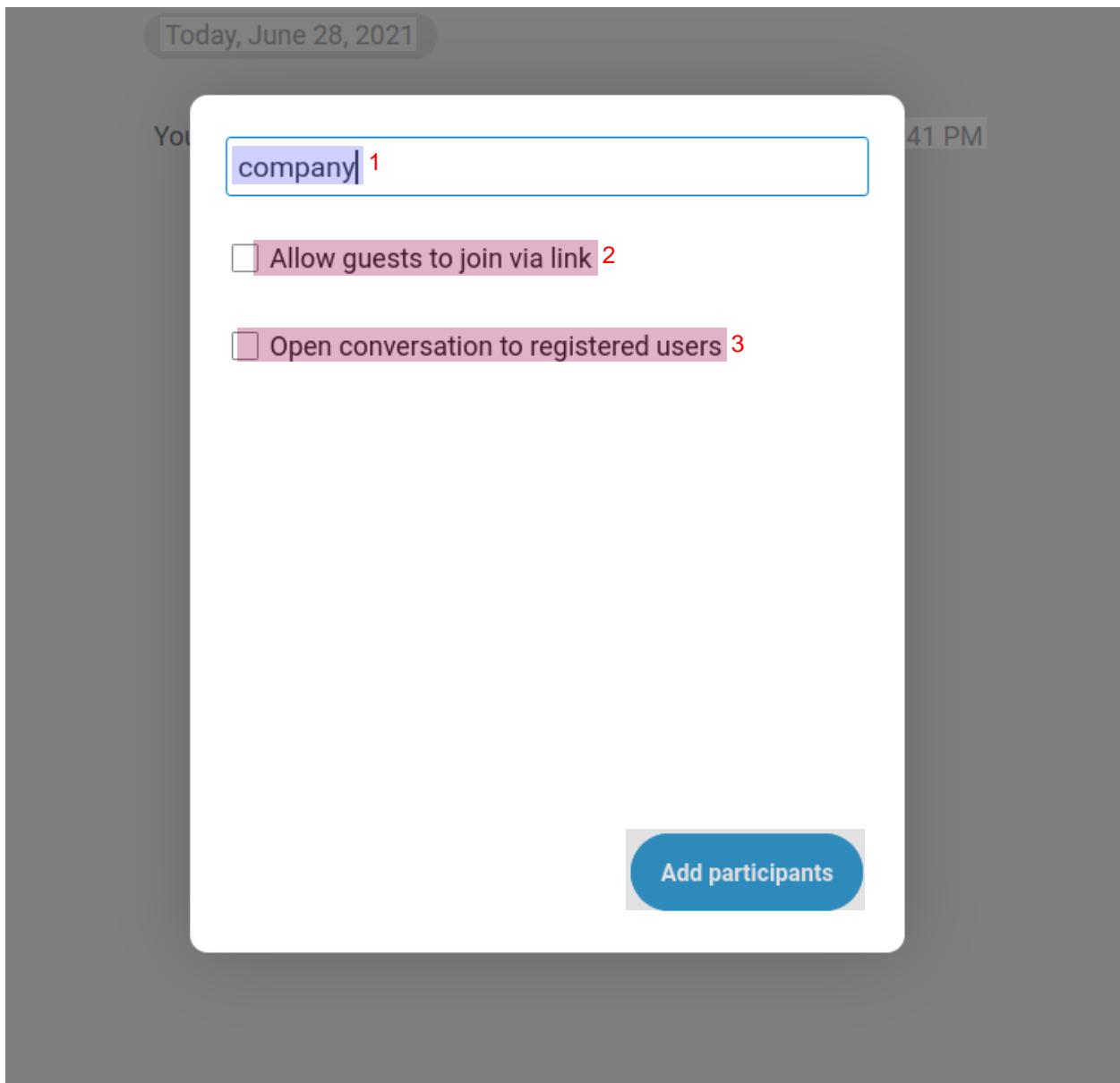
1. **One-on-one conversations.** This is where you have a private chat or call with another Talk user. You can't add other people to this conversation or share it with a link. You start a direct one-on-one chat by looking for another user in the search bar and then clicking their name.
2. **Group conversations.** Besides the person who created the conversation, a group conversation can have any number of people in it. A group conversation can be shared publicly with a link, so external guest users can join a call. It can also be listed, so other people on your Nextcloud server can join the conversation.

6.1.1 Creating a chat 3

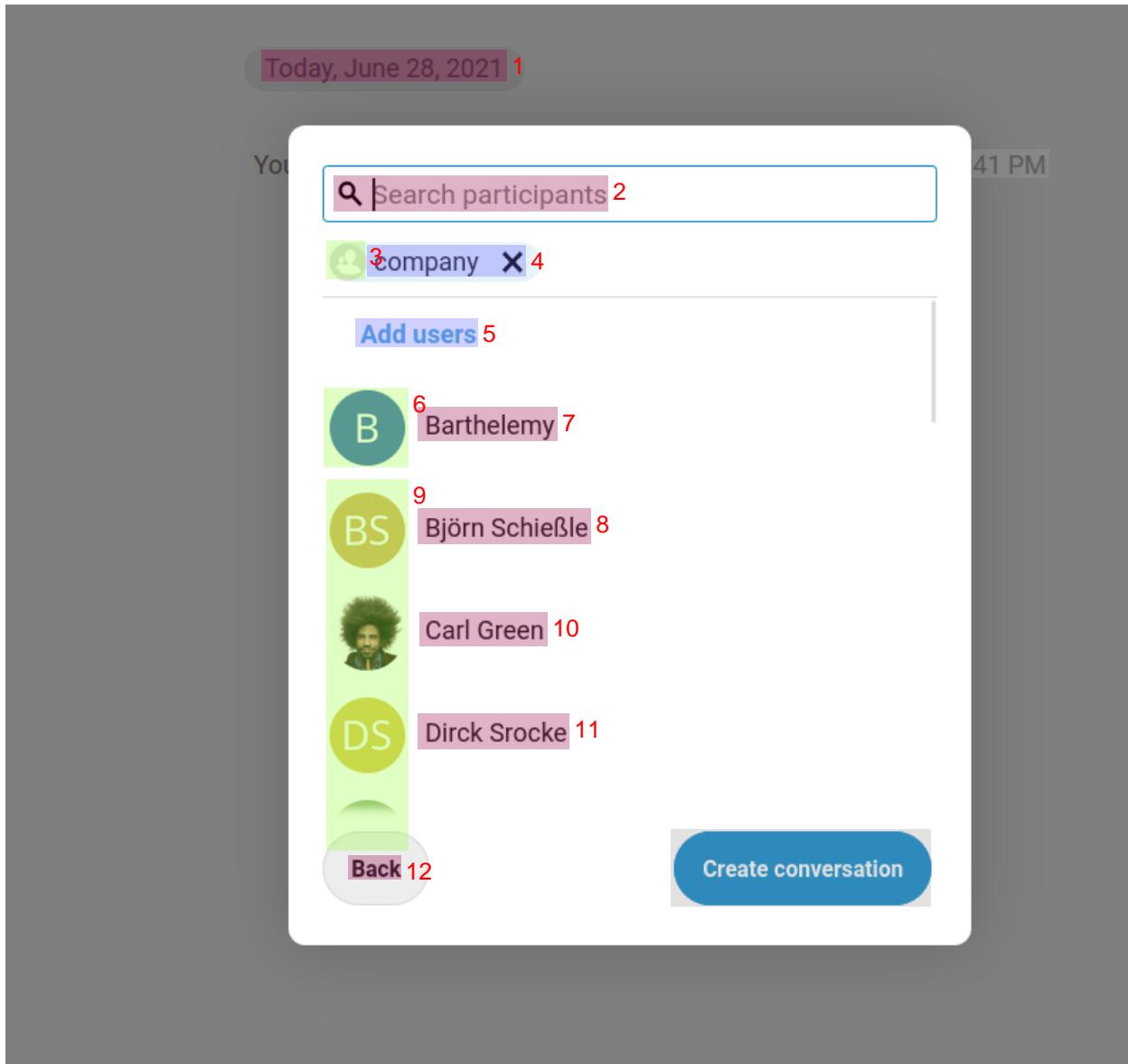
You can create a direct, one-on-one chat by searching for the name of a user, a group or a circle and clicking it. For a single user, a conversation is immediately created and you can start your chat. For a group or circle you get to pick a name and settings before you create the conversation and add the participants. 4



If you want to create a custom group conversation, click the plus button next to the search field. You can then pick a name for the conversation and select if the conversation should be open to external users and if other users on the server can see and join the conversation. 6



In the second step, you get to add participants and finalize the creation of the conversation. **4**



You can cancel the creation of a conversation by clicking outside the white menu area at any time. **13**

This screenshot shows the Nextcloud Talk interface. On the left, there's a sidebar with sections for Conversations, Groups, Circles, and Users. The main area shows a 'test room' with a list of participants: Christine Schott (moderator), Busy with my favorite project!, Barthélémy, Edda, Jan C Borchardt, Joshua, Karl Zero, Marie Deschamps, Marja, Maxence, Mickey Johnson, Working remotely and in a good mood, Molly Allen, Nina Sun, Roeland Douma, Sandra McKinney, system administrator, and Carl Green In a meeting. A message input field at the bottom says 'Write message, @ to mention someone ...'.

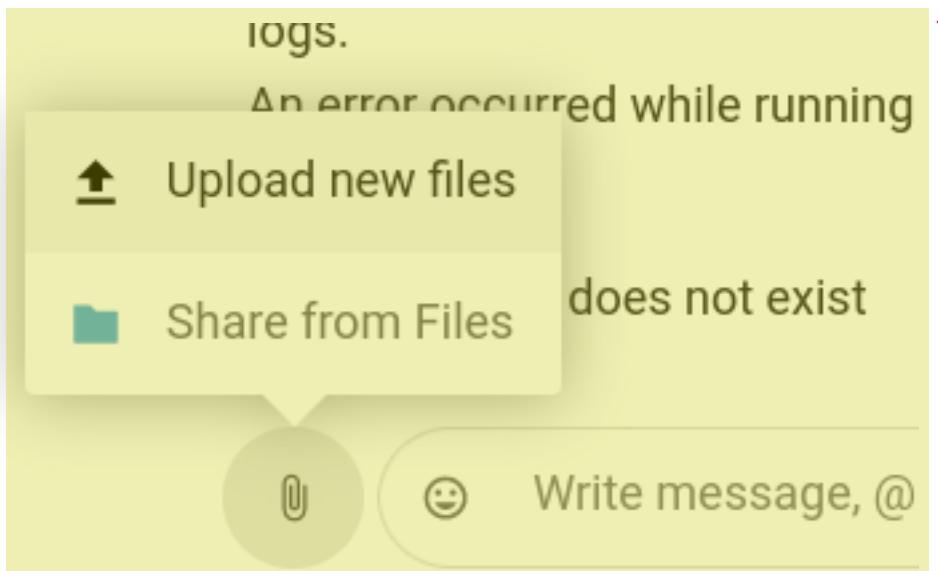
6.1.2 Sharing files in a chat ²

You can share files in a chat in 3 ways. ³

First, you can simply drag'n'drop them on the chat. ⁴

This screenshot shows a call in progress between multiple participants. A central dialog box says 'Drop your files to upload'. A file named 'motivation and management.pdf' (1.5 MB) is shown being uploaded. The participants listed on the right are: jos (moderator), Christine Schott, alice, Mickey Johnson, bob, Edda, Leon Green, Sandra McKinney, Molly Allen, Carl Green, and Paulette Cormier.

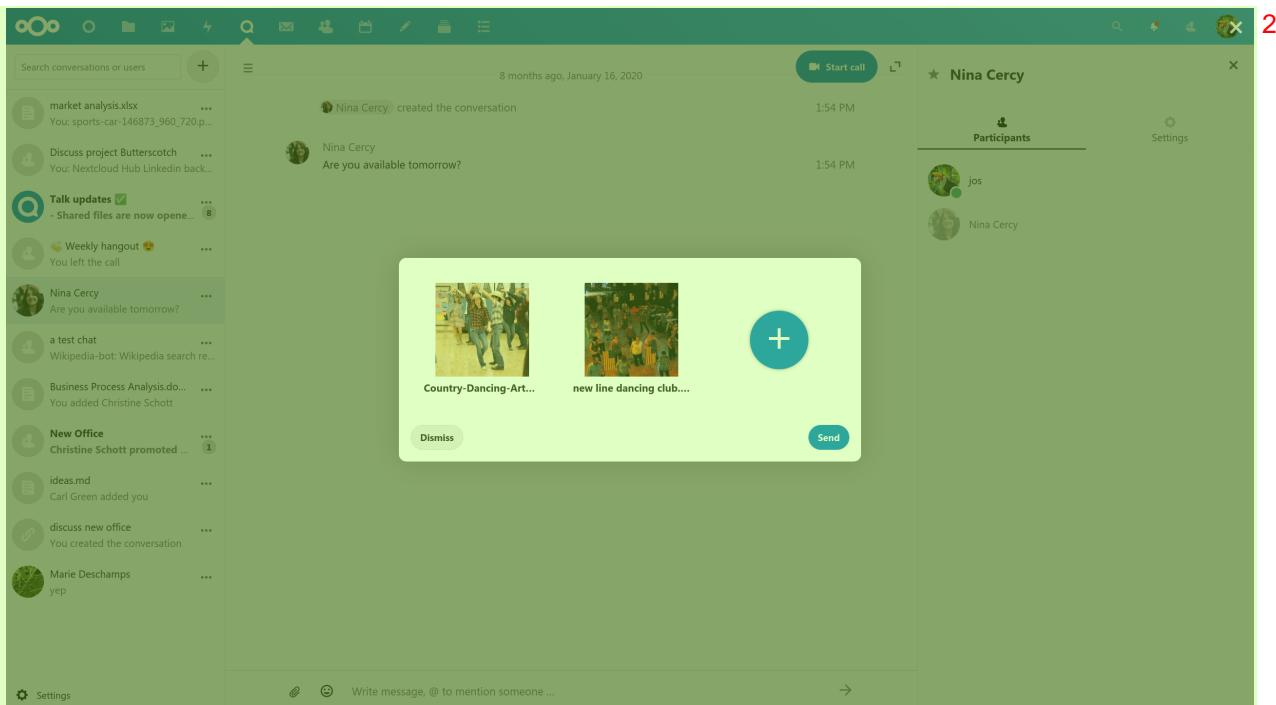
Second, you can select a file from your Nextcloud Files or a file manager by choosing the little paperclip and selecting ⁶ where you'd like to pick the file from.



A screenshot of the Nextcloud mobile application interface. At the top, it shows a message "You added Edda" and the time "7:48 PM". Below this, a modal dialog titled "File to share" is open. The dialog lists several folders: "Camera" (805 KB, 2 years ago), "Collectives" (< 1 KB, 18 days ago), "Corinne documents" (0 KB, 2 years ago), "customer download folder" (13 KB, 2 years ago), "Deck" (0 KB, 4 months ago), and "design work" (21 MB, 2 years ago). At the bottom right of the dialog is a blue "Choose" button. Below the dialog, there is a list of recent activity: "system administrator left the call" at 7:58 PM, "system administrator started a call" at 7:58 PM, and "system administrator left the call" at 7:59 PM.

Folder	Size	Last Modified
Camera	805 KB	2 years ago
Collectives	< 1 KB	18 days ago
Corinne documents	0 KB	2 years ago
customer download folder	13 KB	2 years ago
Deck	0 KB	4 months ago
design work	21 MB	2 years ago

You can add more files until you are done and decide to share the files.¹

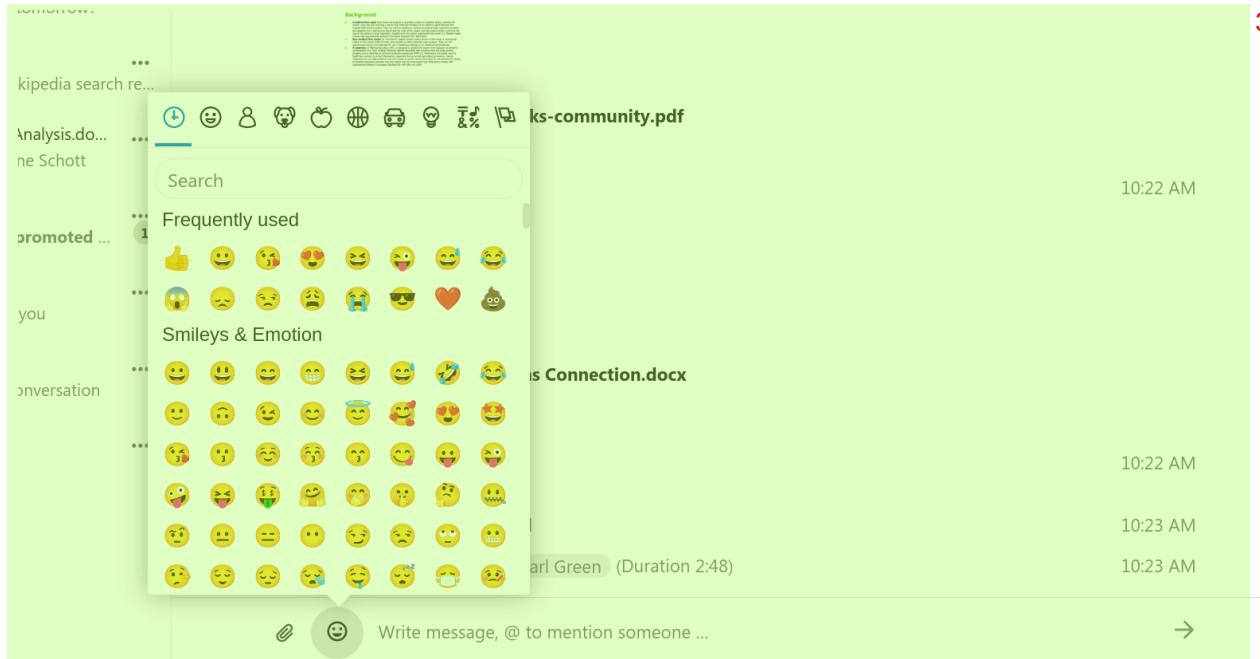


All users will be able to click the files to view, edit or download them, irrespective of them having a user account. Users with an account will have the file automatically shared with them while external guest users will get them shared as a public link.³

⁵

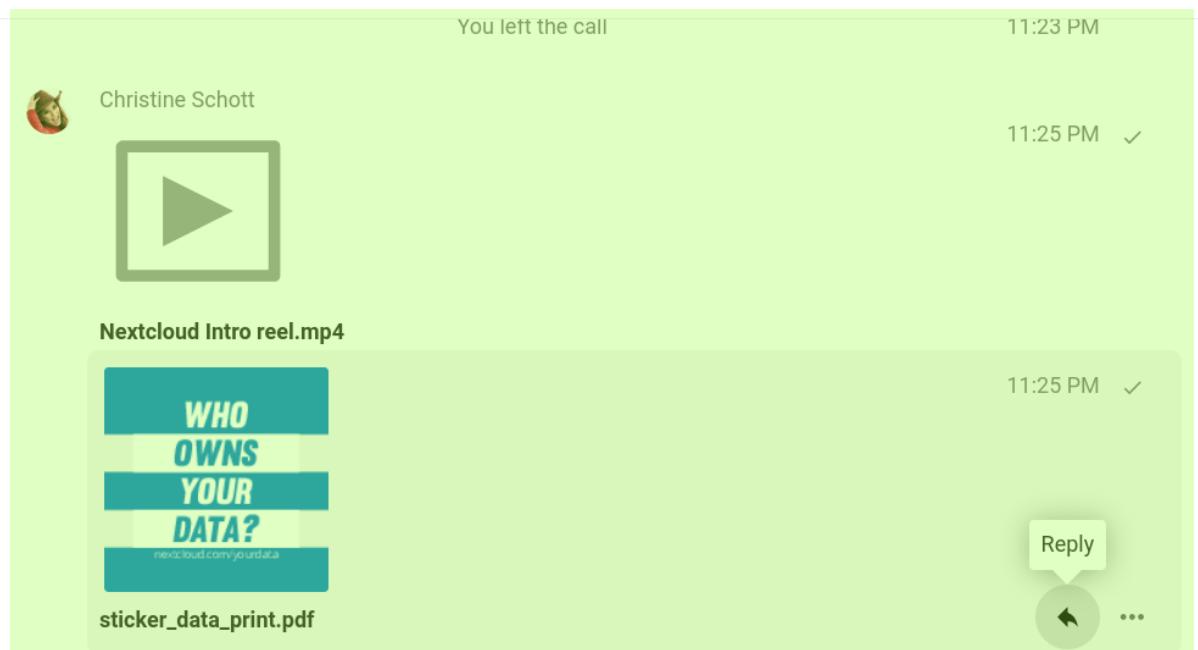
6.1.3 Inserting emoji ¹

You can add emoji using the picker on the left of the text input field. ²

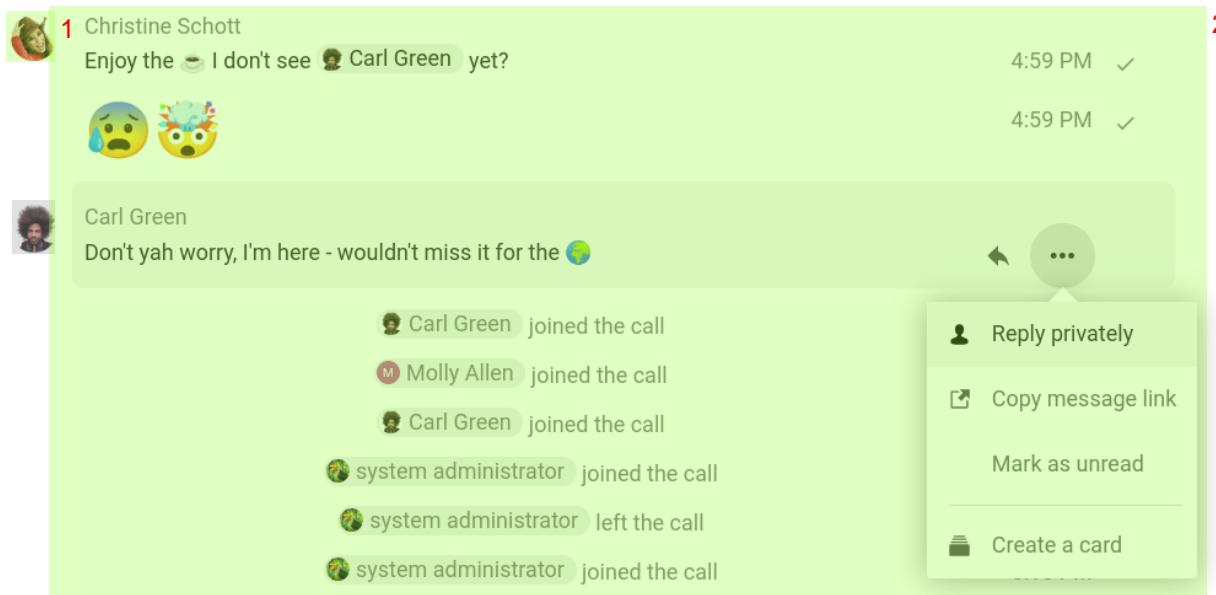


6.1.4 Replying to messages and more ⁴

You can reply to a message using the arrow that appears when you hover a message. ⁵



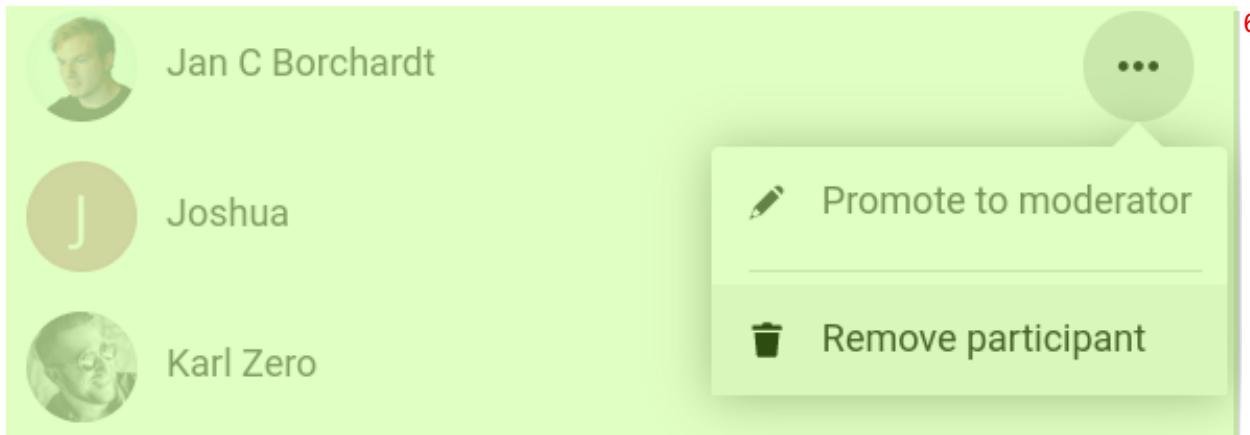
In the . . . menu you can also choose to reply privately. This will open a one-on-one chat. ⁷



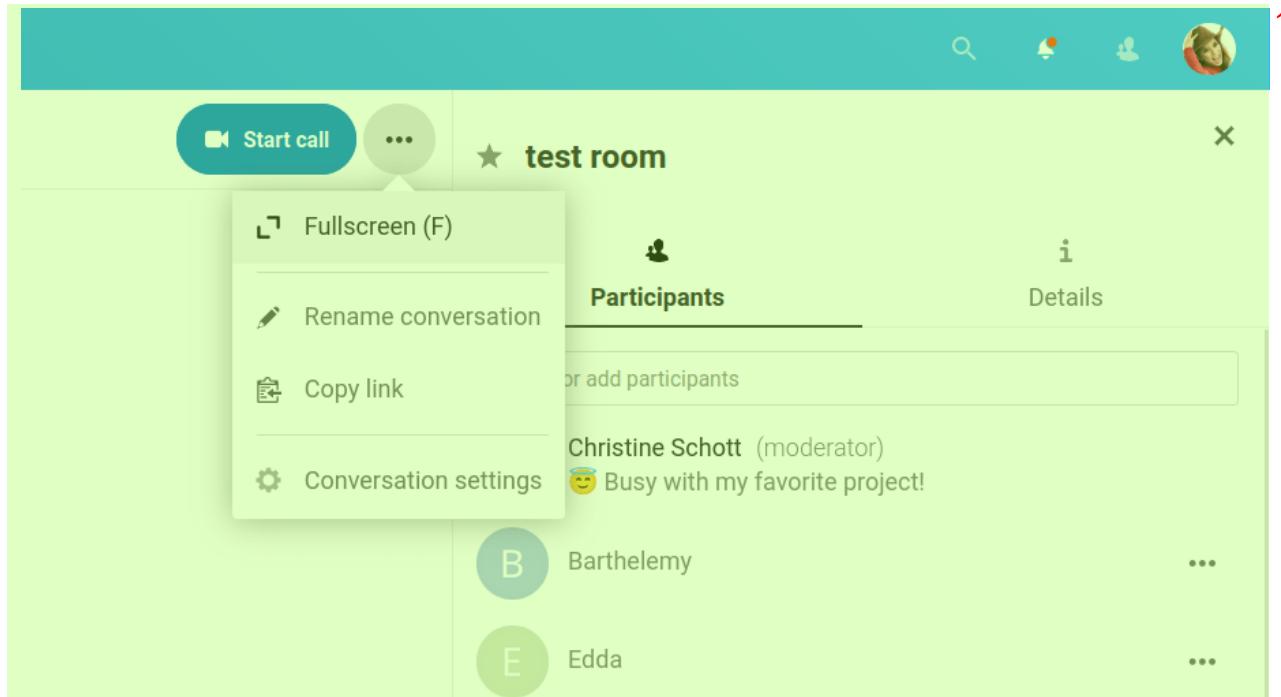
Here you can also create a direct link to the message or mark it unread so you will scroll back there next time you enter the chat. When it is a file, you can view the file in Files.

6.1.5 Managing a conversation 4

You are always moderator in your new conversation. In the participant list on the right you can elevate other participants to moderators using the ... menu to the right of their user name, or remove them from the conversation.



Moderators can configure the conversation. Select Configuration settings from the ... menu of the conversation on the top to access the settings.



Here you can configure the name, guest access, if the conversation is visible to others on the server and more. 2

The screenshot shows a dark-themed interface for Nextcloud Talk. On the left, there's a sidebar with several items listed:

- Description 1**
- Chat notifications 2**
- Guests access 3**
- Conversation settings 4**
- Meeting settings 5**
- Matterbridge 6**
- Danger zone 7**

On the right, there are sections with descriptions and settings:

- Description 8**
 - Chat notifications 10**

Set the notification level for the current conversation. This **11** will affect only the notifications you receive.

 - All messages 12**
 - @-mentions only 13** (marked with a checkmark)
 - Off 14**
 - Guests access 15**

Allow guests to use a public link to join this conversation. **16**

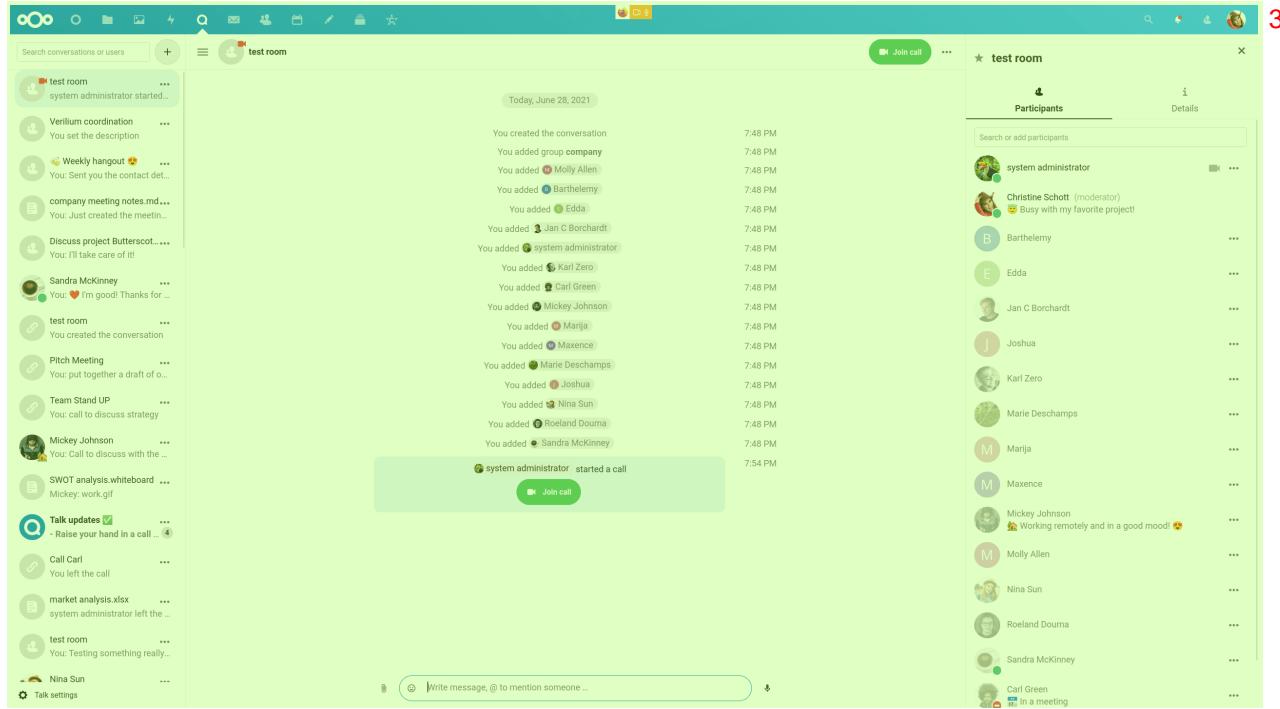
 - Allow guests 17**
 - Copy conversation link**
 - Conversation settings 18**
 - Open conversation to registered users 19**

Locking the conversation prevents anyone to post **20** messages or start calls.

 - Lock conversation 21**

6.1.6 Starting a call ¹

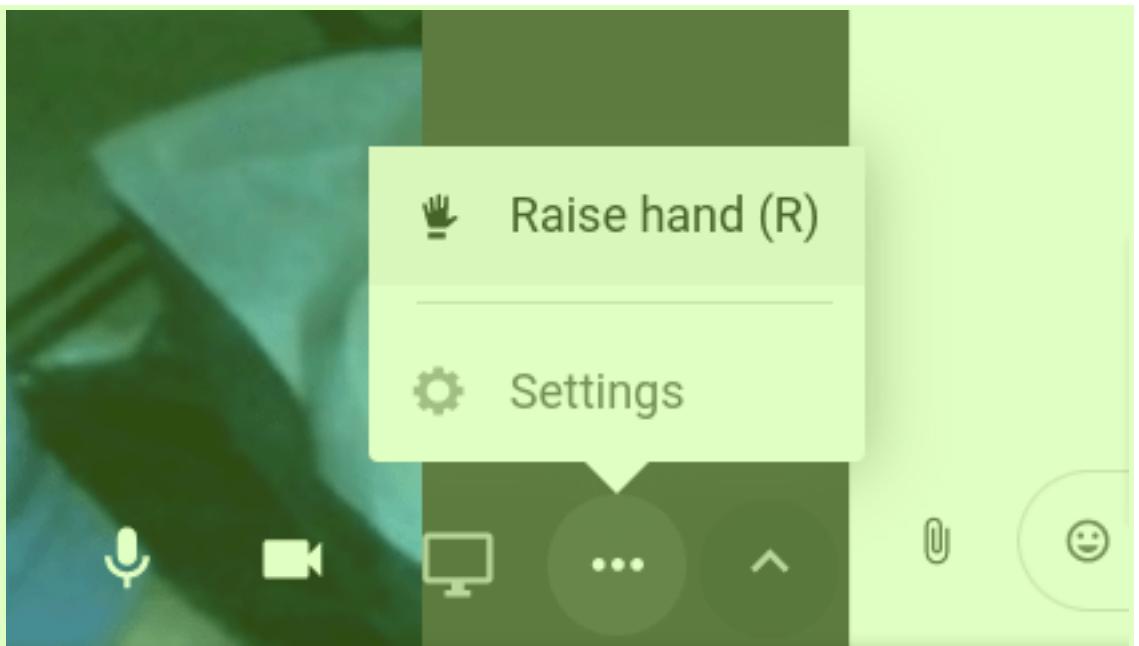
When you're in a conversation, you can start a call any time with the Start call button. Other participants will get notified and can join the call. If somebody else has started a call already, the button will change in a green Join call button.



During a call, you can mute your microphone and disable your video with the buttons on your video on the bottom-right, or using the shortcuts **m** to mute audio and **v** to disable video. You can also use the space bar to toggle mute. When you are muted, pressing space will unmute you so you can speak until you let go of the space bar. If you are unmuted, pressing space will mute you until you let go.

You can hide your video (useful during a screen share) with the little arrow just above the video stream. Bring it back⁵ with the little arrow again.

You can access your settings and choose a different webcam, microphone and other settings in the . . . menu on your video.



The screenshot shows the 'Choose devices' section of the Nextcloud Talk settings. It includes a 'Attachments folder' section where users can choose a folder for attachments, currently set to '/Talk'. The 'Privacy' section contains a checked checkbox for sharing read-status. The 'Sounds' section has a checked checkbox for playing sounds when participants join or leave a call, with a note that sounds cannot be played in Safari browser and iPad/iPhone due to manufacturer restrictions. The 'Keyboard shortcuts' section lists three keyboard shortcuts: 'C' for focusing chat input, 'Esc' for unfocusing to use shortcuts, and 'F' for full-screening the chat or call.

Choose devices

Attachments folder

Privacy

Choose the folder in which attachments should be saved.

/Talk

Sounds

Share my read-status and show the read-status of others

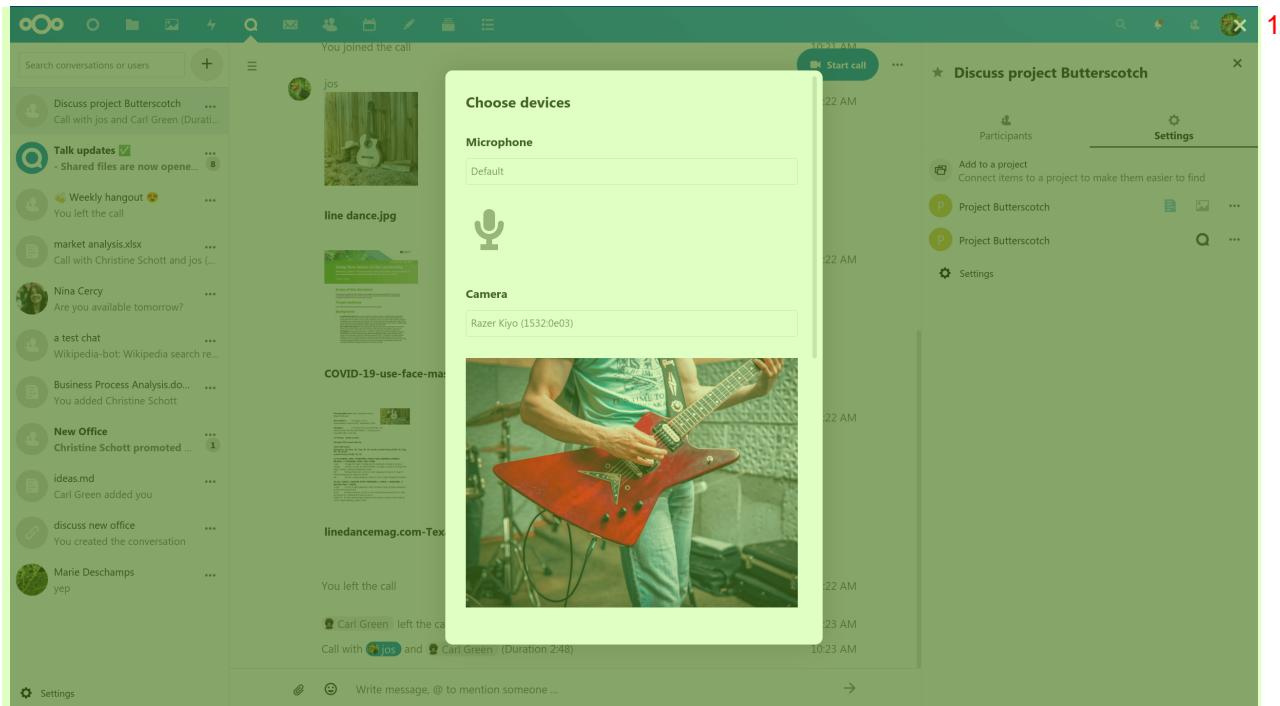
Play sounds when participants join or leave a call

Sounds can currently not be played in Safari browser and iPad and iPhone devices due to technical restrictions by the manufacturer.

Keyboard shortcuts

Speed up your Talk experience with these quick shortcuts.

C	Focus the chat input
Esc	Unfocus the chat input to use shortcuts
F	Fullscreen the chat or call

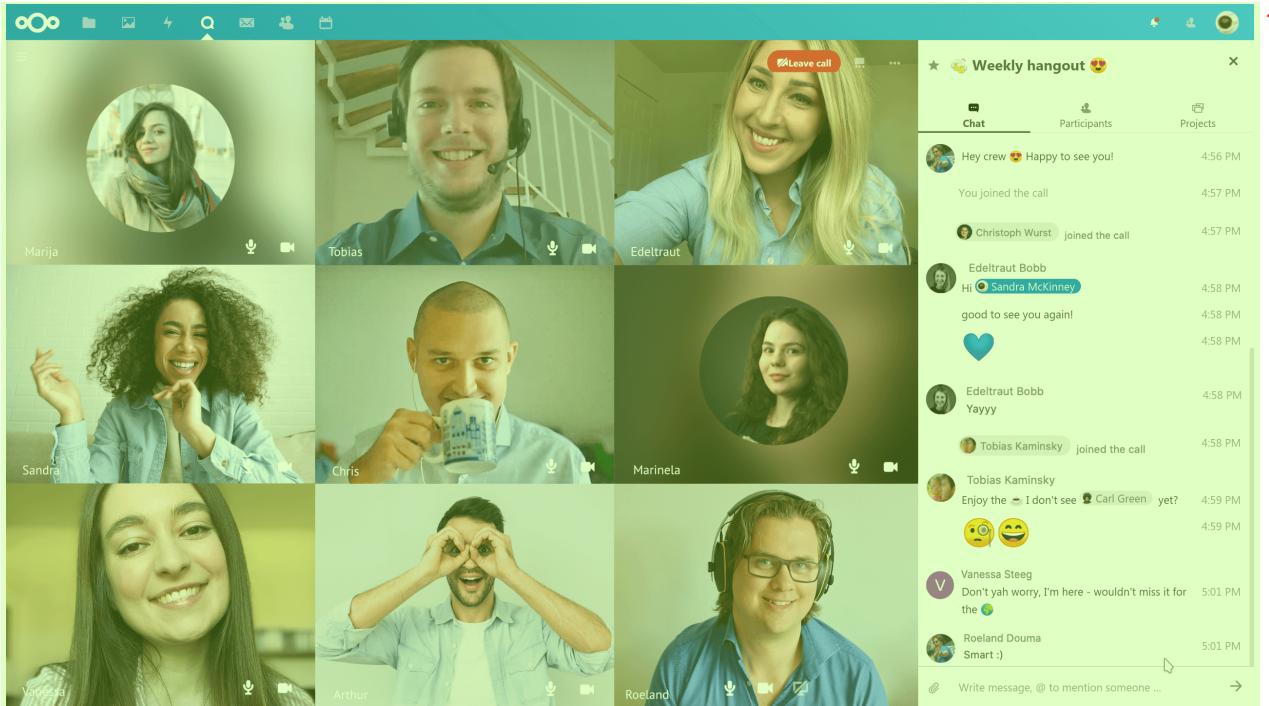


6.1.7 Starting a screen share²

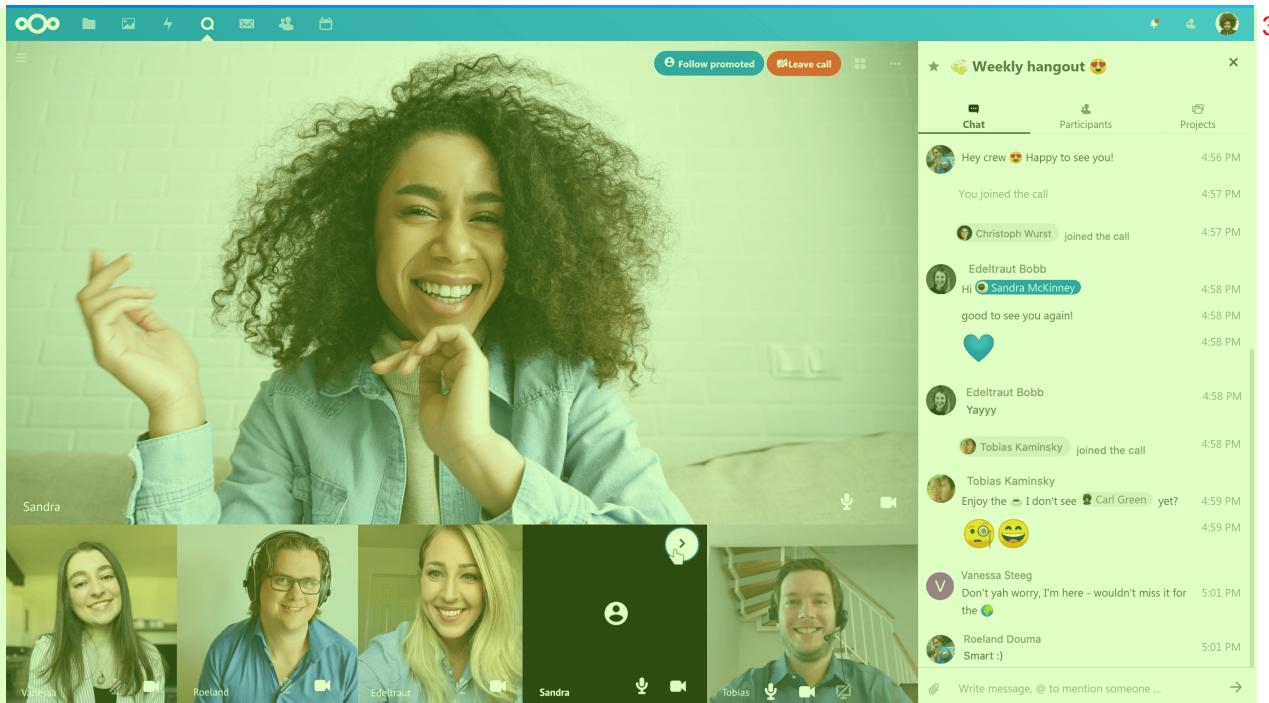
You can click the monitor icon on your video stream to share your screen. Depending on your browser, you will get ³ the option to share a monitor, an application window or a single browser tab.

6.1.8 Changing view in a call⁴

You can switch the view in a call with the little four-block icon in the top-right between promoted-view and grid view. ⁵ The grid view will show everyone equally big and if the people do not fit on the screen, buttons will appear on the left and right that let you navigate.



The promoted view shows the speaker large and others in a row below. If the people do not fit on the screen, buttons will appear on the left and right that let you navigate.



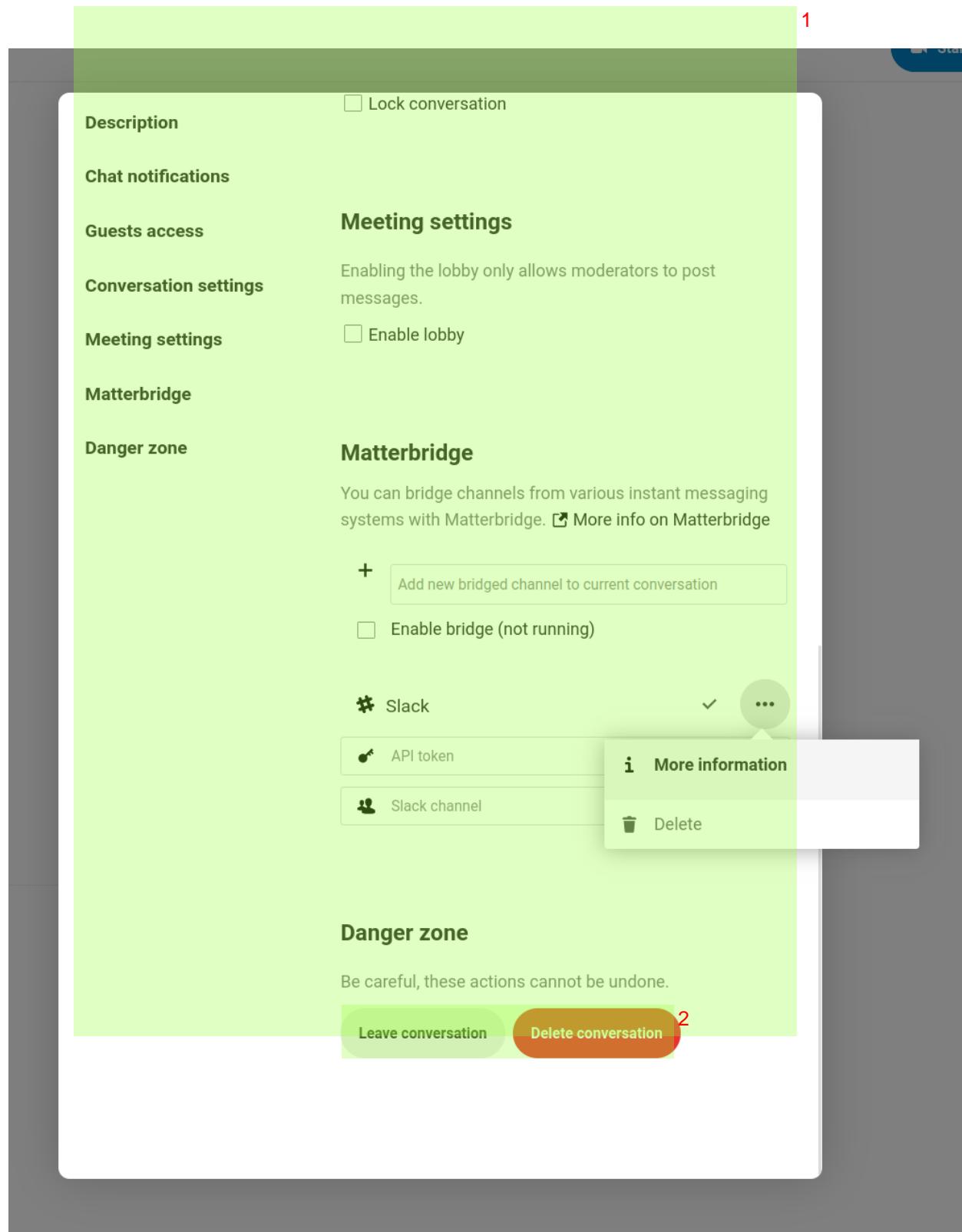
6.2 Advanced Talk features⁴

Nextcloud Talk has a number of advanced features users might find useful.

6.2.1 Matterbridge¹

Matterbridge integration in Nextcloud Talk makes it possible to create ‘bridges’ between Talk conversations and conversations on other chat services like MS Teams, Discord, Matrix and others. You can find a list of supported protocols on the Matterbridge github page.²

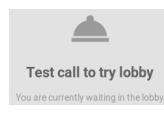
A moderator can add a Matterbridge connection in the chat conversation settings.³



Each of the bridges has its own need in terms of configuration. Information for most is available on the Matterbridge **3** wiki and can be accessed behind more information menu in the ... menu. You can also access the wiki directly.

6.2.2 Lobby ¹

The lobby feature allows you to show guests a waiting screen until the call starts. This is ideal for webinars with ² external participants, for example.



You can choose to let the participants join the call at a specific time, or when you dismiss the lobby manually. ³

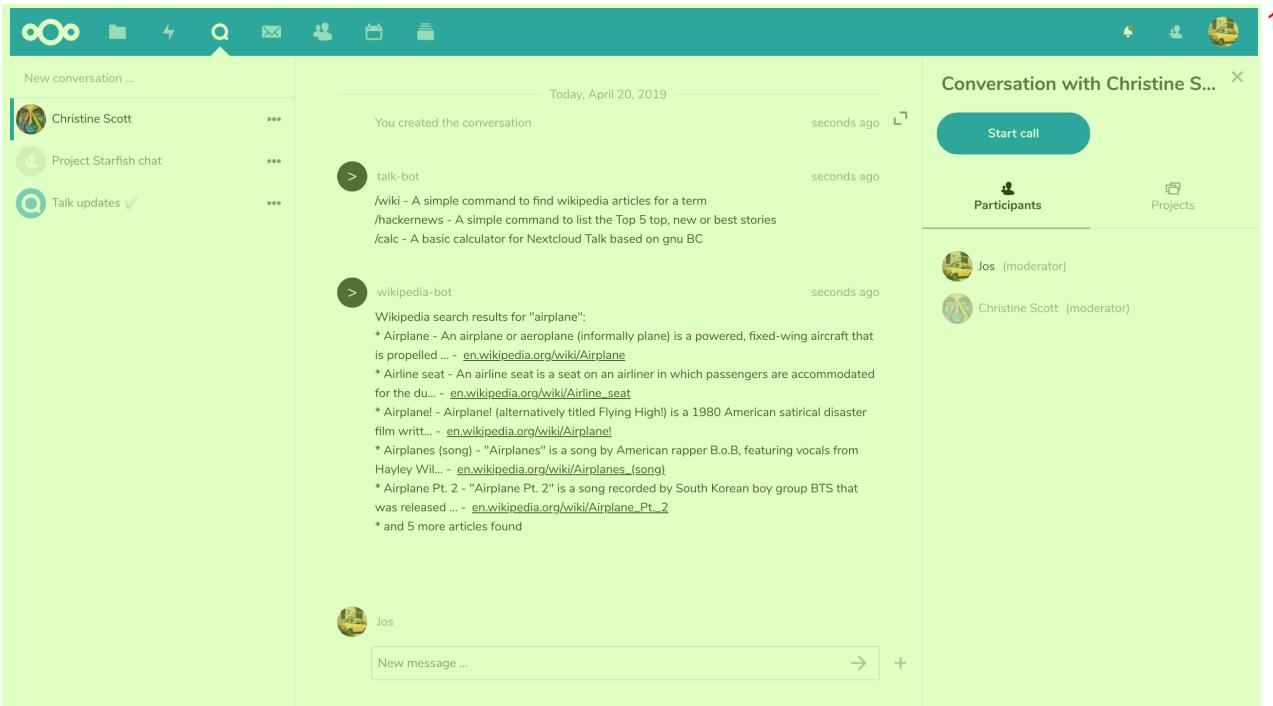
6.2.3 Commands ⁴

Nextcloud allows users to execute actions using commands. A command typically looks like ⁵

/wiki airplanes ⁶

Administrators can configure, enable and disable commands. Users can use the help command to find out what ⁷ commands are available.

/help ⁸



Find more information in the admin documentation for Talk.²

6.2.4 Talk from Files³

In the Files app, you can chat about files in the sidebar, and even have a call while editing it. You first have to join the ⁴ chat.

The screenshot shows a file list on the left and a chat interface on the right. The file list includes the following items:

		Size	Modified
Shared	...	201 KB	a year ago
Shared	...	135 KB	2 years ago
Shared	...	< 1 KB	a year ago
Shared	...	41 KB	a year ago
Shared	...	< 1 KB	2 years ago
Shared	...	608 KB	2 years ago
Shared	...	3 MB	2 years ago
Shared	...	969 KB	2 years ago
Shared	...	64 KB	3 years ago
		4.9 MB	

The chat interface has tabs for Activity, Chat (selected), Comments, Sharing, and Versions. A search bar at the top of the right panel contains the text "customer project". A red number "1" is visible in the top right corner of the interface.

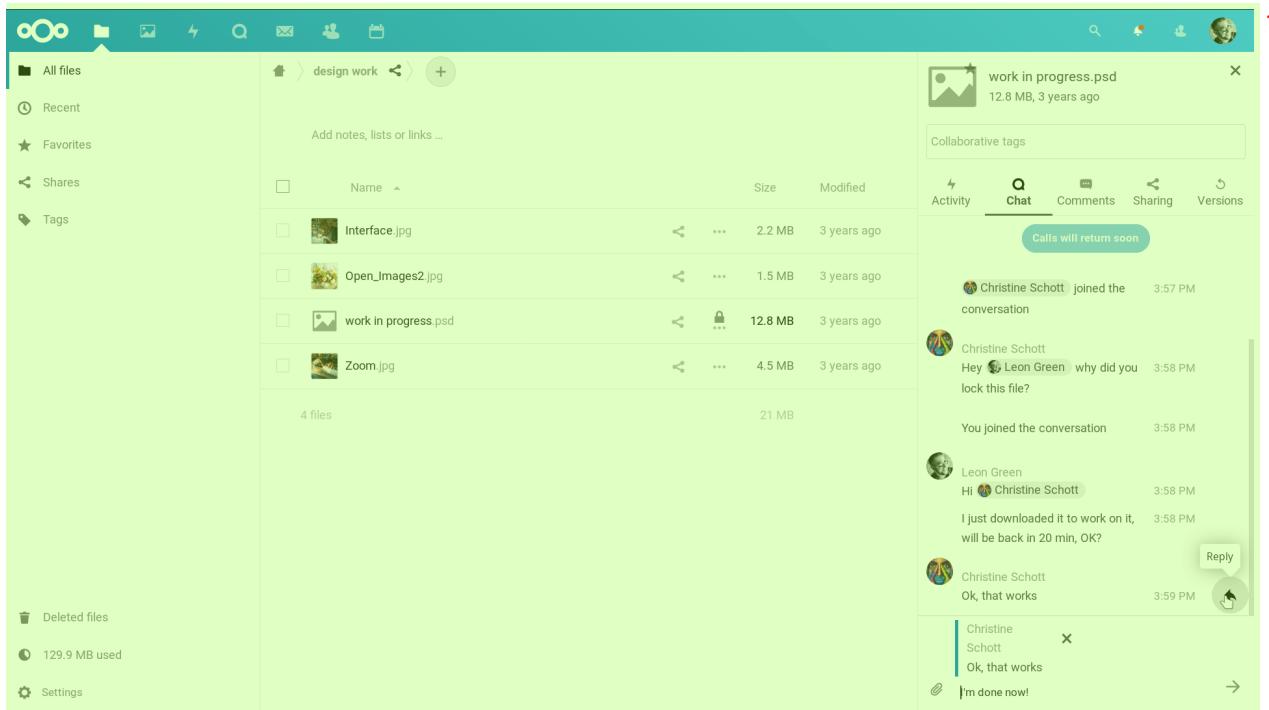
customer project

Activity Chat Comments Sharing Versions

1

Discuss this file

Join conversation



You can then chat or have a call with other participants, even when you start editing the file. 2

The screenshot shows the Nextcloud desktop application. On the left is a rich text editor window with a toolbar containing icons for bold, italic, underline, etc. The editor contains two sections: 'idea nr 1' and 'second idea'. 'idea nr 1' lists bullet points: 'build an AI that finds the best cat pictures on the internet', 'write a Nextcloud app which shows one per day', 'happy users!', '...', and 'profit'. It also includes a note: 'this doesn't seem a very unique idea in any case ...'. 'second idea' lists bullet points: 'same as above... but with dogs! What could go wrong?' and a note: 'See also [barkpost.com](#) for dog pictures!'. Below the editor is a thumbnail image of a dog sleeping under a blanket. To the right is a video call interface. It shows a video feed of a woman named 'Marinela Gogo'. Below the video are tabs for Chat, Activity, Comments, Sharing, and Versions. The Chat tab is active, showing a message from 'Jos Poortvliet': 'Tell me what you think;:)'. Marinela Gogo replies: 'ehrm... cat pictures... isn't that very 2005? not that I don't like cats'. Jos Poortvliet replies: 'Hey! It has AI, so it is very 2019... hmm but ok... perhaps we should talk, if you have time, to come up with a better idea??'. A message from 'Marinela Gogo' follows: 'joined the call'. A red number '3' is in the top right corner of the video call interface.

In Talk, a conversation will be created for the file. You can chat from there, or go back to the file using the . . . menu⁴ in the top-right.

You added Mickey Johnson 6:06 PM

6:07 PM

6:07 PM

6:09 PM

4 months ago, February 14, 2021

/yet? 7:22 PM

k, feels like you are ignoring me Christine Schott 7:23 PM

Carl Green hasn't had time. He's been in a meeting for a 7:23 PM ✓

Fullscreen (F)

Go to file

Copy link

Conversation settings

Participants

Christine Schott Busy with my favorite p

Mickey Johnson Working remotely and i

Carl Green In a meeting

6.2.5 Create tasks from chat or share tasks in chat 2

If Deck is installed, you can use the . . . menu of a chat message and turn the message into a Deck task. 3

4 Christine Schott Enjoy the 😞 I don't see Carl Green yet? 4:59 PM ✓

4:59 PM ✓

Carl Green Don't yah worry, I'm here - wouldn't miss it for the 🌎

Carl Green joined the call

Molly Allen joined the call

Carl Green joined the call

system administrator joined the call

system administrator left the call

system administrator joined the call

Reply privately

Copy message link

Mark as unread

Create a card



A screenshot of the Deck application interface. On the left, there's a sidebar with a search bar and a list of recent conversations and files. The main area shows a file named "company meeting notes.md". A modal dialog box is open in the center, titled "Create a new card". It contains the following fields:

- Verilium coordination
- TODO
- Set up a meeting with Verilium!

Below the text input field, there's a note: "I just got off the phone with Marcel. For next week, we need to set up a meeting with Verilium!" followed by "[Message from Christine Schott in company meeting notes.md] (call/yytr7k3w)". At the bottom of the dialog are "Cancel" and "Create card" buttons. The number "3" is in the top right corner of the main window. To the right, a sidebar titled "Participants" lists users: Christine Schott (busy), Marie Deschamps, Mickey Johnson (working remotely), and Sandra McKinney.

From within Deck, you can share tasks into chat conversations. 6

The screenshot shows two main sections of the Nextcloud interface. On the left, there is a Kanban board titled 'Work in progress' with one card: 'Set up initial strategy call' due in 18 days. On the right, a detailed view of a task card for 'Set up initial strategy call' is displayed. The card includes fields for 'Details' (with a house icon), 'Attachments' (with a plus sign), 'Assign a tag to this card...', 'Participants' (with a person icon), 'Due date' (set for June 24, 2021, 12:00 AM), and 'Add to a project' (with a brief description). Below the card is a 'Description' section with a list of bullet points: '• explain goal in company call' and '• pick a date'. At the bottom of the card view, there is a 'Start call' button. To the right of the card view, a separate window titled 'Pitch Meeting' shows a list of participants: Christine Schott (moderator), Mickey Johnson, Nina Sun, and Carl Green. The window also displays a message from Christine Schott about setting up a strategy call.

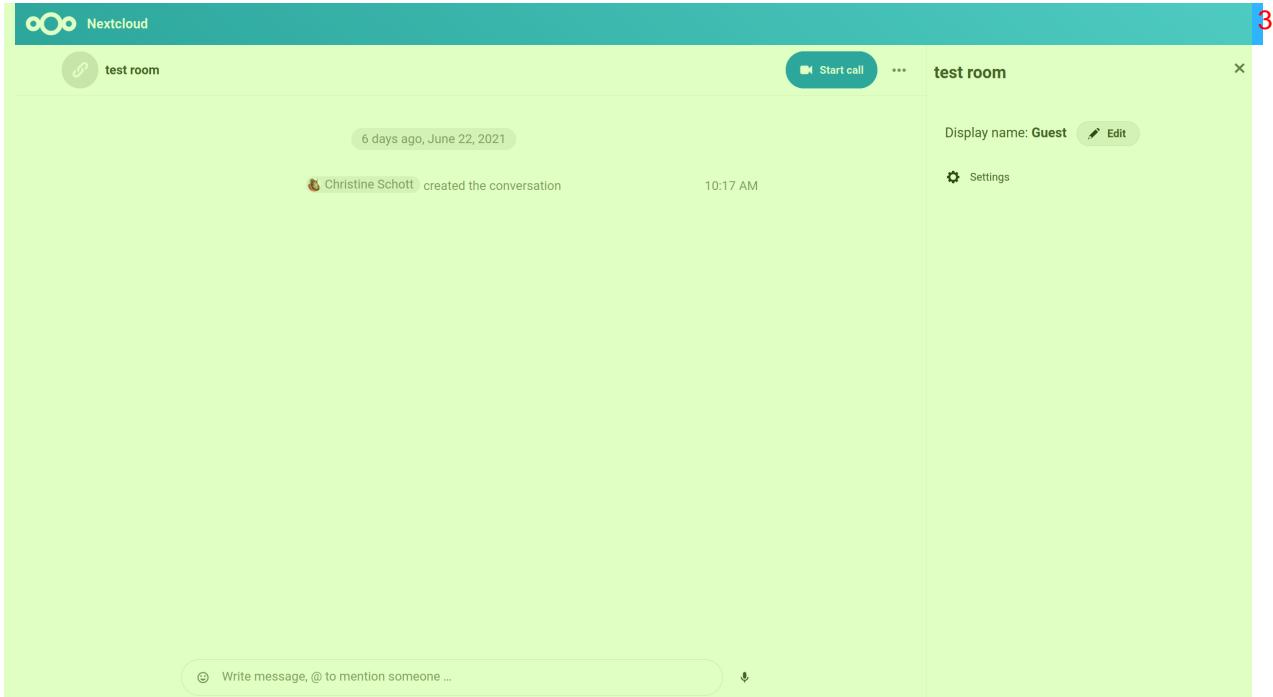
6.3 join a call or chat as guest

Nextcloud Talk offers audio/video and text chat integrated in Nextcloud. It offers a web interface as well as mobile apps.

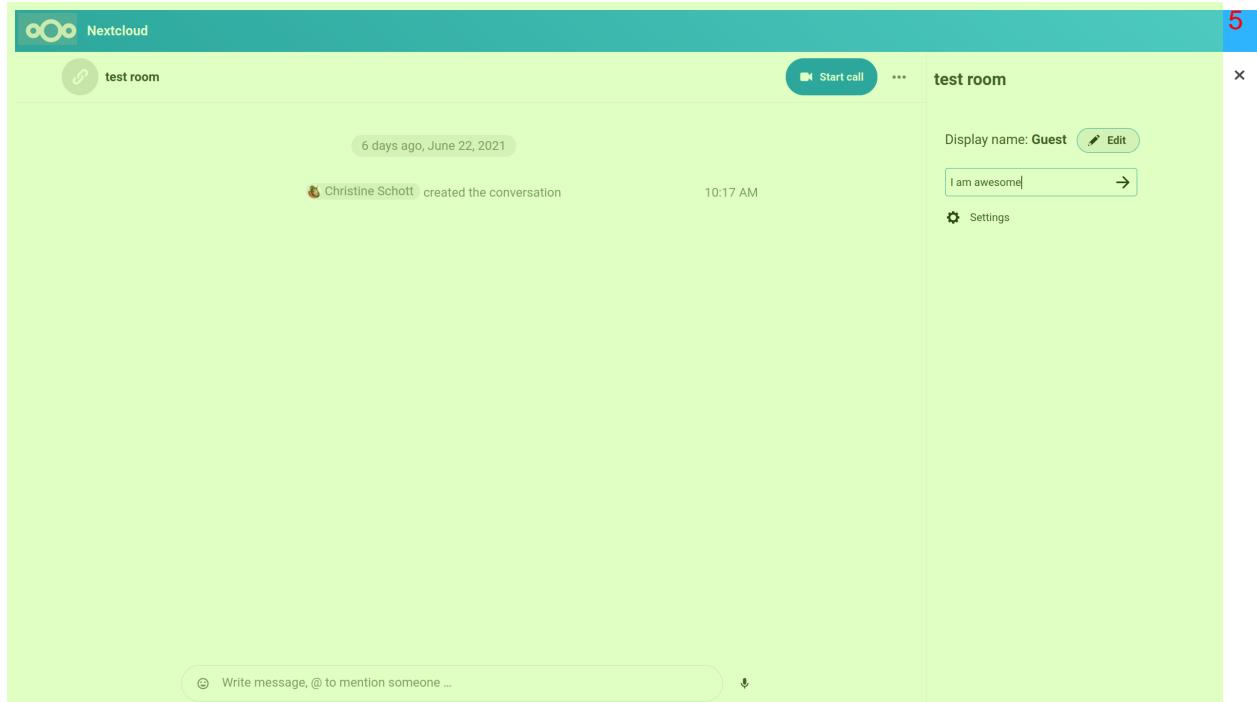
You can find out more about Nextcloud Talk on our website.³

6.3.1 Joining a chat ¹

If you received a link to a chat conversation, you can open this in your browser to join the chat. ²



You can change your name using the edit button on the top-right by clicking the Edit button. ⁴



Your camera and microphone settings can be found in the Settings menu. There you can also find a list of shortcuts ⁶ you can use.

The screenshot shows the Nextcloud Talk interface during a video call. At the top right, there are buttons for 'Start call' and '...'. The participant's name 'test room' is displayed next to a video thumbnail. Below the video, there are three small icons representing different communication modes. On the left, there is a sidebar with three main sections: 'Choose devices', 'Sounds', and 'Keyboard shortcuts'. The 'Sounds' section is currently active, showing a checked checkbox for 'Play sounds when participants join or leave a call'. A note below states that sounds cannot be played in Safari browser and iPad/iPhone due to manufacturer restrictions. The 'Keyboard shortcuts' section is also visible, listing several keyboard shortcuts for chat input and search.

Sounds

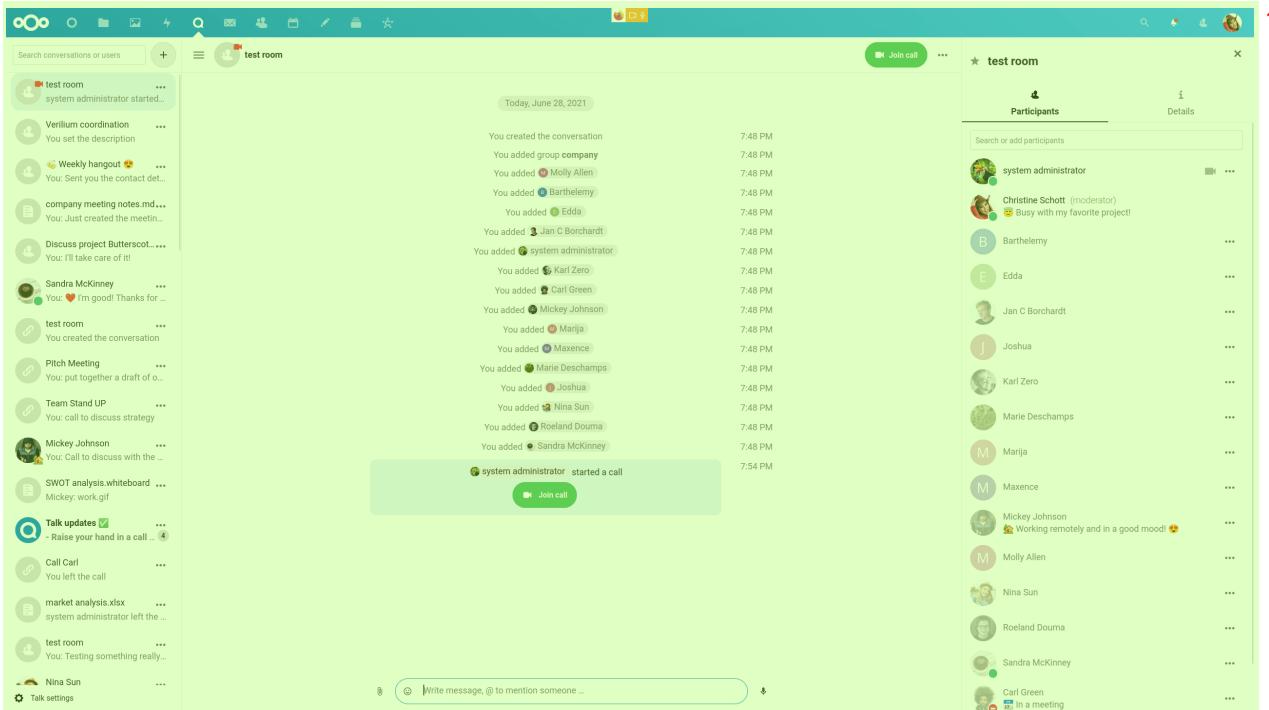
Play sounds when participants join or leave a call
Sounds can currently not be played in Safari browser and iPad and iPhone devices due to technical restrictions by the manufacturer.

Keyboard shortcuts

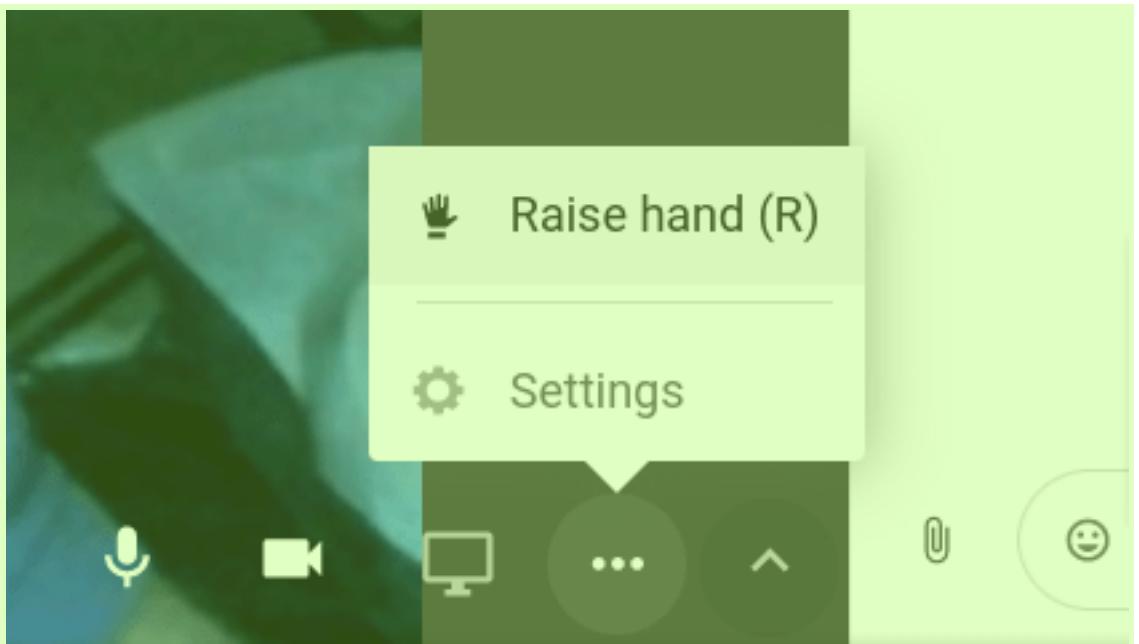
Speed up your Talk experience with these quick shortcuts.

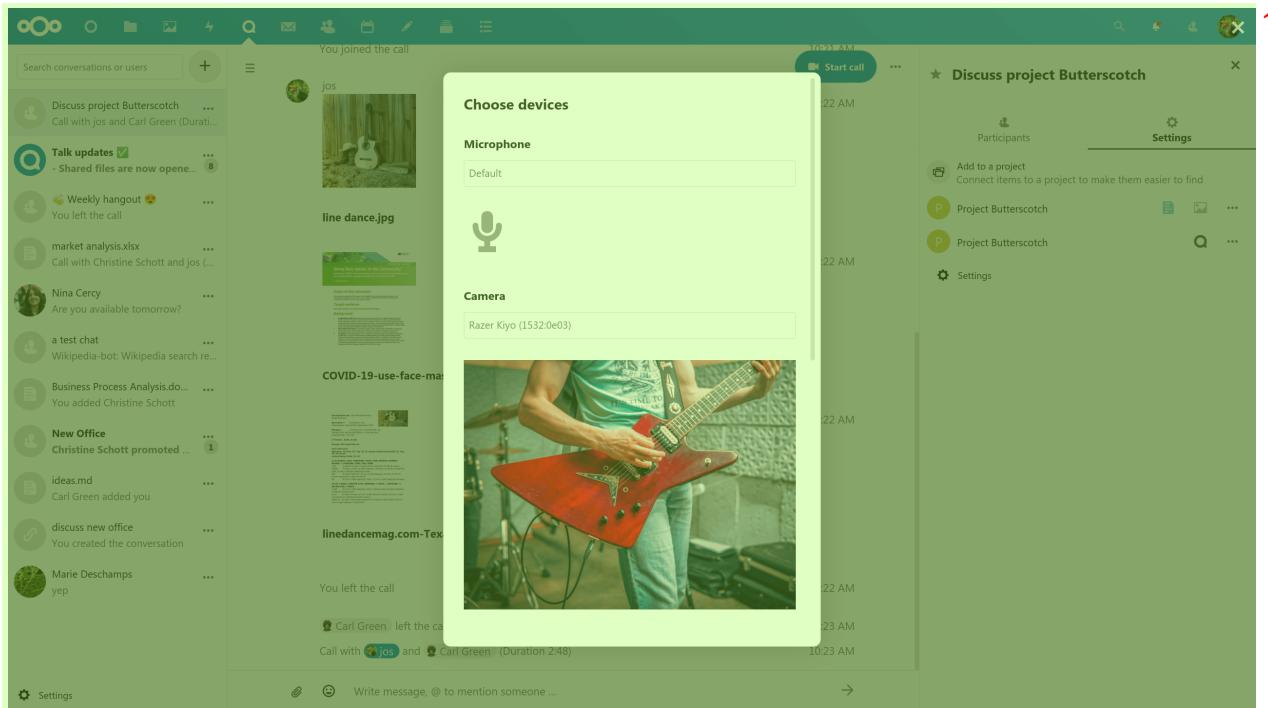
C	Focus the chat input
Esc	Unfocus the chat input to use shortcuts
F	Fullscreen the chat or call
Ctrl + F	Search

You can start a call any time with the `Start call` button. Other participants will get notified and can join the call.² If somebody else has started a call already, the button will change in a green `Join call` button.



During a call, you can find the Camera and Microphone settings in the . . . menu on your video. **2**





During a call, you can mute your microphone and disable your video with the buttons on your video on the bottom-right, or using the shortcuts **m** to mute audio and **v** to disable video. You can also use the space bar to toggle mute. When you are muted, pressing space will unmute you so you can speak until you let go of the space bar. If you are unmuted, pressing space will mute you until you let go. 2

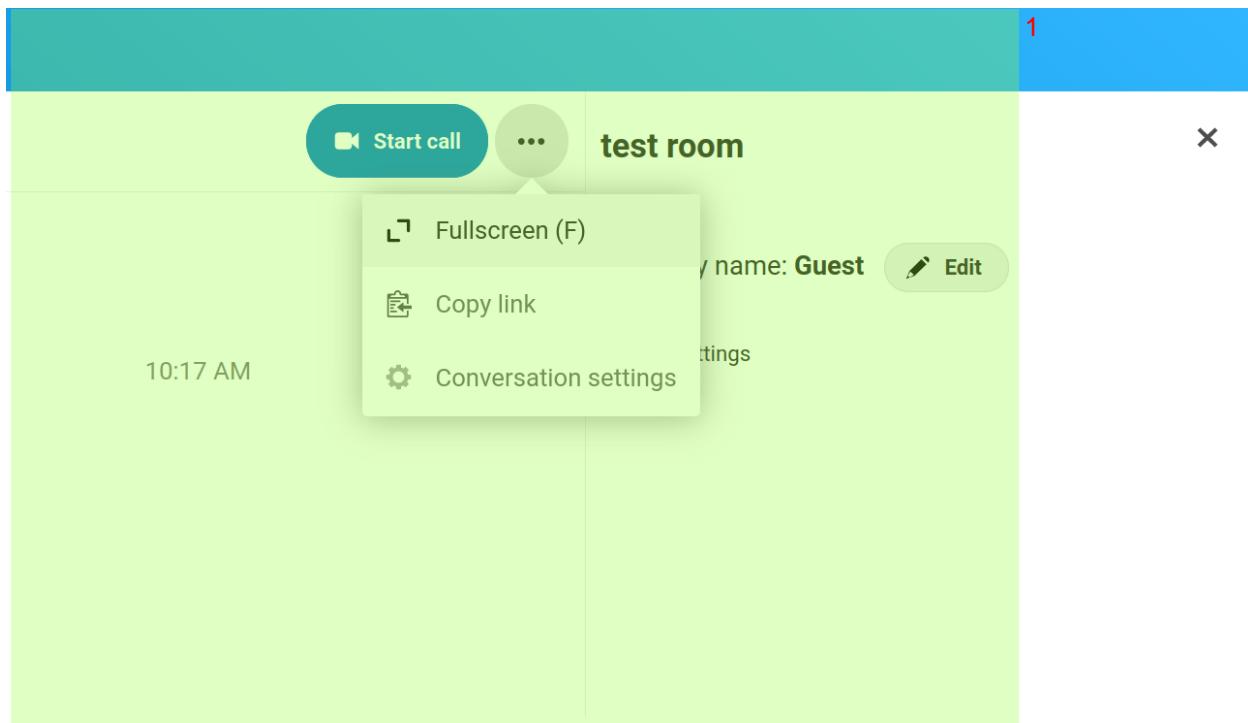
You can hide your video (useful during a screen share) with the little arrow just above the video stream. Bring it back with the little arrow again. 3

6.3.2 Starting a screen share 4

You can click the monitor icon on your video stream to share your screen. Depending on your browser, you will get the option to share a monitor, an application window or a single browser tab. 5

6.3.3 More settings 6

In the conversation menu you can choose to go full-screen. You can also do this by using the **f** key on your keyboard. In the conversation settings, you can find notification options and the full conversation description. 7



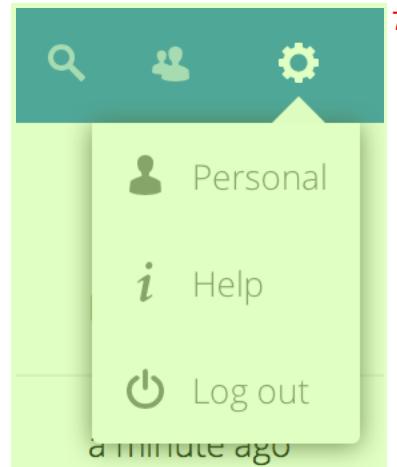
Setting your preferences²

As a user, you can manage your personal settings.³

To access your personal settings:⁴

1. Click on your profile picture in the top, right corner of your Nextcloud instance.⁵

The Personal Settings Menu opens:⁶

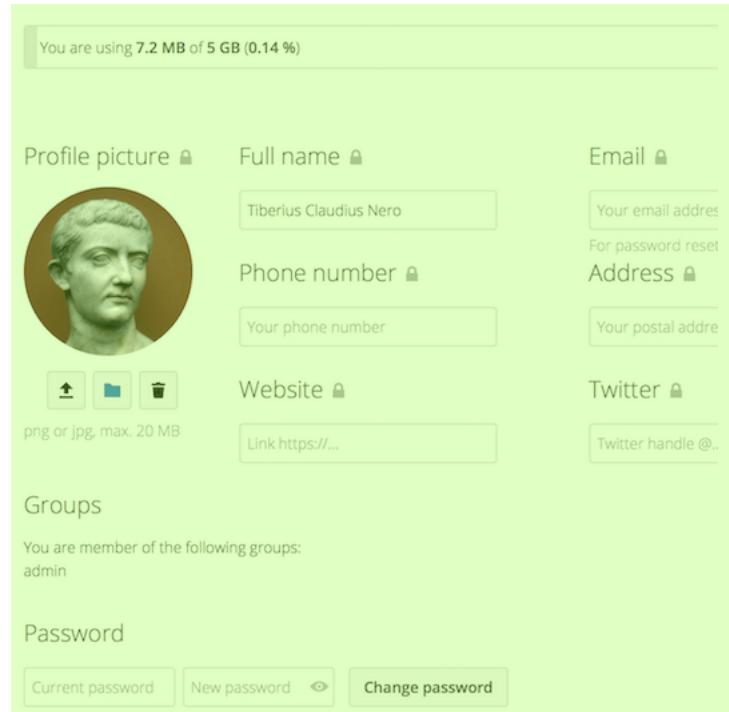


*Personal Settings Menu*⁸

2. Choose *Settings* from the drop down menu:⁹

Note: If you are an administrator, you can also manage users and administer the server. These links do not appear to¹⁰ a non-admin user.

The options listed in the Personal Settings Page depend on the applications that are enabled by the administrator. Some¹¹ of the features you will see include the following:



1

- Usage and available quota
- Manage your profile picture
- Full name (You can make this anything you want, as it is separate from your Nextcloud login name, which is unique and cannot be changed)
- Email address
- List of your Group memberships
- Change your password
- *Using two-factor authentication*
- *Setting your preferences*
- Choose the language for your Nextcloud interface
- Links to desktop and mobile apps
- Manage your Activity stream and notifications
- Default folder to save new documents to
- Your Federated sharing ID
- Social sharing links
- Nextcloud version

2

Note: Available options and settings depending on your administrators configuration. If you are not able to change the password or the display-name in your personal settings, please contact your administrator for help.

Universal access²

Universal access is very important to us. We follow web standards and check to make everything usable also with ³ keyboard and assistive software such as screen readers. We aim to be compliant with the Web Content Accessibility Guidelines 2.1 on AA level, with the high contrast theme even on AAA level. We also follow the German BITV 2.0 guidelines.

If you find any issues, don't hesitate to report them on our issue tracker. And if you want to get involved, come join⁴ our design team!

8.1 Zoom and responsiveness⁵

The Nextcloud interface is fully responsive and usable on any size of screen. You can zoom in and out to fit the text⁶ and element size to your liking. The navigation and sidebar can be expanded or collapsed.

8.2 Navigating via keyboard⁷

You can navigate the web interface with keyboard only just like you can with the mouse:⁸

- Tab and Shift + Tab to move between elements
- Enter or Space to activate or open the element (depending on the type of element)
- Escape to be used to close modals, popover menus, and file viewers
- Left arrow and Right arrow to navigate between photos in the viewer
- Ctrl + F to focus the search field
- Ctrl + S to save changes in editors like Nextcloud Text

⁹

For quicker navigation, we offer 2 “skip links” at the beginning of the document which allow you to:¹⁰

- Skip to main content ¹¹
- Skip to navigation of app

Nextcloud Talk has shortcuts which are also documented inside the settings of the app itself: 1

- C to focus the message input field 2
- Escape to unfocus the message input field to be able to use shortcuts
- F to fullscreen the chat or call

- **While in a call:** 3

- M to toggle the microphone on and off 4
- V to toggle video on and off
- Space for push to talk or push to mute
- R to raise or lower hand

Nextcloud Mail has shortcuts as well, also documented inside the settings of the app itself: 5

- C to compose a new message 6
- Left arrow to switch to a newer message
- Right arrow to switch to an older message
- S to toggle a message as favorite
- U to toggle a message unread
- Del to delete a message
- Ctrl + Enter to send
- R to refresh and load new mails

8.3 Included themes 7

We offer several themes you can activate to aid accessibility: 8

- **High contrast theme:** A high contrast mode to ease your navigation. Visual quality will be reduced but clarity 9 will be increased.
- **Dark theme:** A dark theme to ease your eyes by reducing the overall luminosity and brightness. It is still under development, so please report any issues you may find.
- **Dyslexia font:** OpenDyslexic is a free typeface/font designed to mitigate some of the common reading errors caused by dyslexia.

To reach the accessibility settings: 10

1. Open the settings menu at the end of the header 11
2. Pick **Settings**
3. In the navigation, pick **Accessibility**

Note: Contrast of elements can vary based on custom theming. For example, the primary theming color is used as background color by the header, log in page, and primary buttons. If this causes contrast issues, please contact your administrator for help. 12

Using two-factor authentication²

Two-factor authentication (2FA) is a way to protect your Nextcloud account against unauthorized access. It works by ³ requiring two different ‘proofs’ of your identity. For example, *something you know* (like a password) and *something you have* like a physical key. Typically, the first factor is a password like you already have and the second can be a text message you receive or a code you generate on your phone or another device (*something you have*). Nextcloud supports a variety of 2nd factors and more can be added.

Once a two-factor authentication app has been enabled by your administrator you can enable and configure it in *Setting⁴ your preferences*. Below you can see how.

9.1 Configuring two-factor authentication⁵

In your Personal Settings look up the Second-factor Auth setting. In this example this is TOTP, a Google Authenticator⁶ compatible time-based code:

You will see your secret and a QR code which can be scanned by the TOTP app on your phone (or another device). ⁷ Depending on the app or tool, type in the code or scan the QR and your device will show a login code which changes every 30 seconds.

9.2 Recovery codes in case you lost your 2nd factor⁸

You should always generate backup codes for 2FA. If your 2nd factor device gets stolen or is not working, you will be able to use one of these codes to unlock your account. It effectively functions as a backup 2nd factor. To get the backup codes, go to your Personal Settings and look under Second-factor Auth settings. Choose *Generate backup codes*:

You will then be presented with a list of one-time-use backup codes: ¹⁰

You should put these codes in a safe spot, somewhere you can find them. Don’t put them together with your 2nd factor ¹¹ like your mobile phone but make sure that if you lose one, you still have the other. Keeping them at home is probably the best thing to do.

The screenshot shows the Nextcloud sidebar with the following numbered items:

- Personal 2
- Personal info 3
- Security 4
- Accessibility 5
- Sharing 6
- Administration 7
 - Overview 8
 - Basic settings 9
 - Sharing 10
 - Security 11
 - Theming 12
 - Groupware 13
 - Workflow 14

Two-Factor Authentication 15

- Backup code 16
 - Backup codes have been generated. 0 of 10 codes have been used. 17
 - Regenerate backup codes 18
 - If you regenerate backup codes, you automatically invalidate old codes. 19
- TOTP (Authenticator app) 20
 - Enable TOTP 21
 - Your new TOTP secret is: BDYEWMHZNSPDQD21
 - For quick setup, scan this QR code with your TOTP app:
 - After you configured your app, enter a test code below to ensure everything works correctly. 23
 - Authentication code 24
 - Verify 24
- U2F device 25
 - No U2F devices configured. You are not using U2F as second factor at the moment. 26
 - Add U2F device 27

Two-Factor Authentication 28

Backup code 29

Generate backup codes 30

TOTP (Authenticator app) 31

Enable TOTP 32

U2F device 33

No U2F devices configured. You are not using U2F as second factor at the moment. 34

Add U2F device 35

Two-Factor Authentication 1

Backup code 2

These are your backup codes. Please save and/or print them as you will not be able to read the codes again later

YQTF3MKJTP6UTS71
1JF2NFPVHVXJ5934
G3DZ28HXC5YKS6MK
UC20TNSQ0OSN35JE
NYU84I4X8JFA2TCZ
SJKVNULTU7733W2Y
TFBF7FDN3VWVD5ZH
20JV65TSEQAN7G12
6B02WNAVIN3KPYNW
R9TYF8NMNSZGLZ3E

[Save backup codes](#) [Print backup codes](#)

[Regenerate backup codes](#)

If you regenerate backup codes, you automatically invalidate old codes. 3

TOTP (Authenticator app) 4 5

Enable TOTP

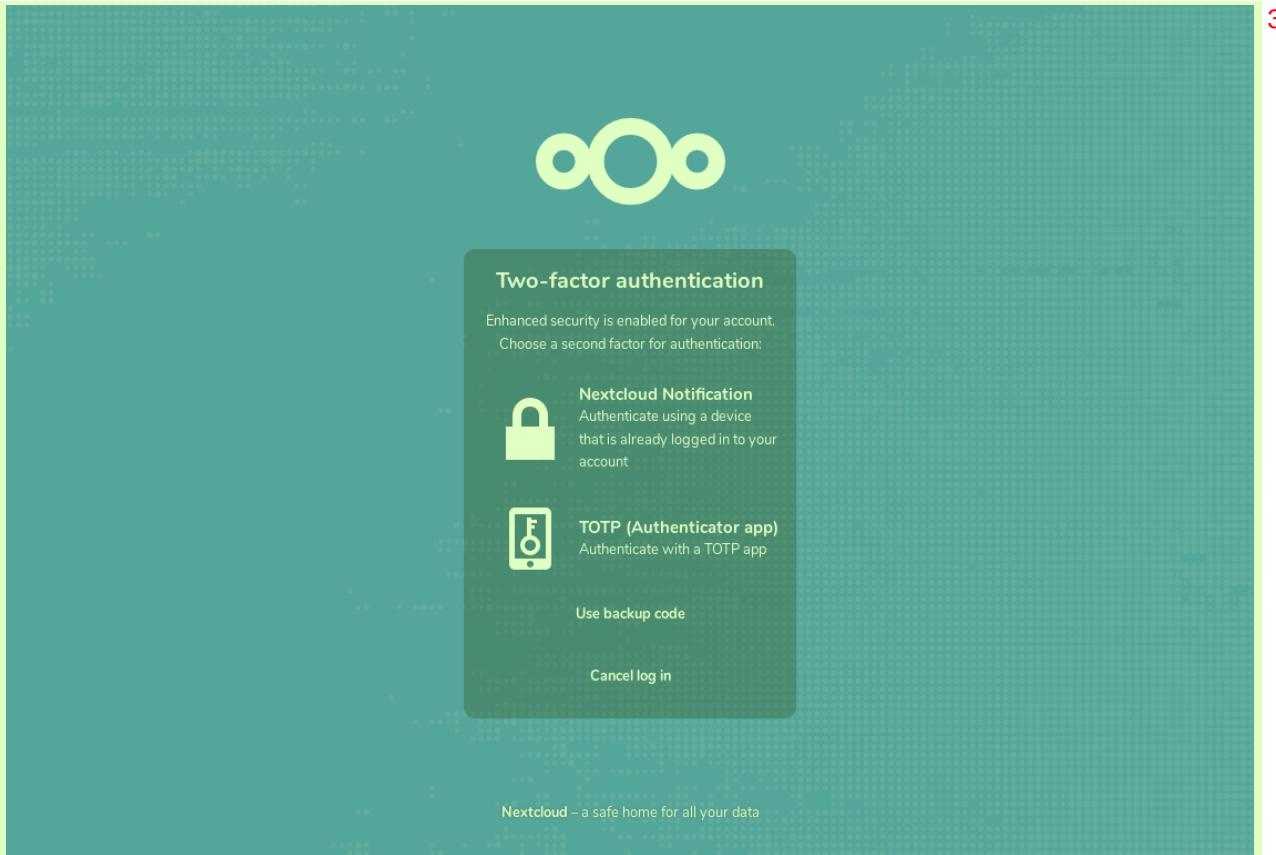
U2F device

No U2F devices configured. You are not using U2F as second factor at the moment.

[Add U2F device](#)

9.3 Logging in with two-factor authentication ¹

After you have logged out and need to log in again, you will see a request to enter the TOTP code in your browser. If you enable not only the TOTP factor but another one, you will see a selection screen on which you can choose two-factor method for this login. Select TOTP:



Now, just enter your code: ⁴

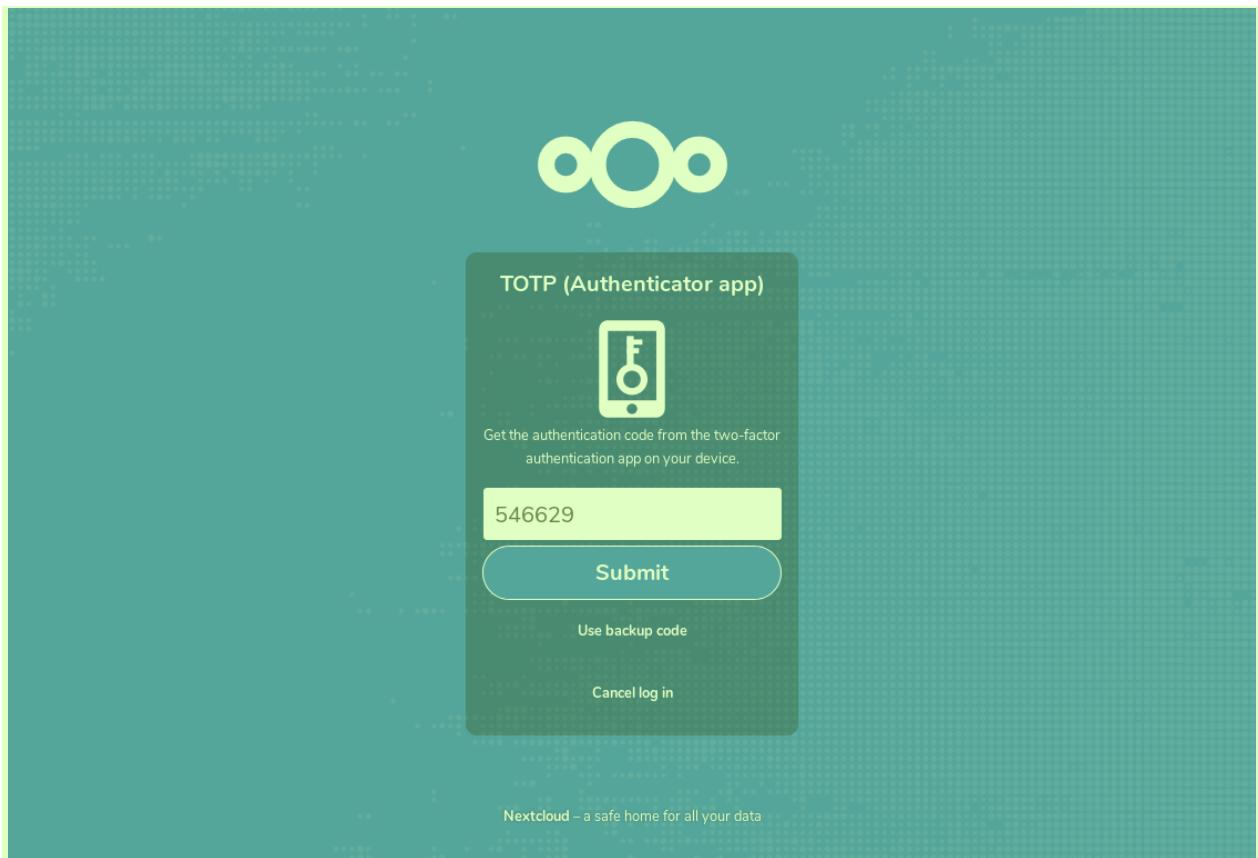
If the code was correct you will be redirected to your Nextcloud account. ⁵

Note: Since the code is time-based, it's important that your server's and your smartphone's clock are almost in sync. ⁶
A time drift of a few seconds won't be a problem.

9.4 Using two-factor authentication with hardware tokens ⁷

You can use two-factor authentication based on hardware tokens. The following devices are known to work: ⁸

- TOTP based: ⁹
 - Nitrokey Pro
 - Nitrokey Storage
- FIDO U2F based: ¹⁰



– Nitrokey FIDO U2F ²

9.5 Using client applications with two-factor authentication³

Once you have enabled 2FA, your clients will no longer be able to connect with just your password unless they also ⁴ have support for two-factor authentication. To solve this, you should generate device specific passwords for them. See *Manage connected browsers and devices* for more information on how to do this.

9.6 Considerations ⁵

If you use WebAuthn to login to your Nextcloud be sure to not use the same token for 2FA. As this would mean you ⁶ are again only using a single factor.

CHAPTER 10

Manage connected browsers and devices¹

The personal settings page allows you to have an overview on the connected browsers and devices.²

10.1 Managing connected browsers³

In the list of connected browsers you see which browsers connected to your account recently: ⁴

You can use the trash icon to disconnect any of the browsers in the list.

10.2 Managing devices⁵

In the list of connected devices you see all the devices and clients you generated a device password for and their last ⁶ activity:

You can use the trash icon to disconnect any of the devices in the list.⁷

At the bottom of the list you find a button to create a new device-specific password. You can choose a name to identify ⁸ the token later. The generated password is used for configuring the new client. Ideally, generate individual tokens for every device you connect to your account, so you can disconnect those individually if necessary:

Note: You have only access to the device password when creating it, Nextcloud will not save the plain password,⁹ hence it's recommended to enter the password on the new client immediately.

Note: If you are *Using two-factor authentication* for your account, device-specific passwords are the only way to ¹⁰ configure clients. The server will deny connections of clients using your login password then.

The screenshot shows the 'Personal - Nextcloud' interface at <http://localhost:8080/index.php/settings/personal#sessions>. A red number '1' is in the top right corner of the window. The left sidebar has links for Personal info, Sessions, Devices, Sync clients, TOTP Second-factor Auth, and Federated Cloud. The main content area shows 'Sessions' with four entries and 'Devices' with one entry.

Sessions

These are the web, desktop and mobile clients currently logged in to your ownCloud.

Browser	Most recent activity
Mozilla/5.0 (X11; Linux x86_64; rv:46.0) Gec...	a day ago
Mozilla/5.0 (X11; Linux x86_64; rv:46.0) Gec...	3 minutes ago
Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/...	seconds ago
Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/...	17 minutes ago

Devices

You've linked these devices.

Name	Most recent activity
Android	10 days ago

The screenshot shows the 'Personal - Nextcloud' settings page at <http://localhost:8080/index.php/settings/personal#devices>. A red number '1' is in the top right corner of the window. The left sidebar includes links for Personal info, Sessions, Devices, Sync clients, TOTP Second-factor Auth, and Federated Cloud. The main content area displays a 'Devices' section with a table showing three entries: 'Android' (most recent activity 10 days ago), 'unknown client' (3 days ago), and another 'unknown client' (3 days ago). Below the table is a note about device passwords and a 'Create new device password' button. The bottom section features a 'Language' dropdown set to English, a 'Help translate' link, and a call-to-action 'Get the apps to sync your files'.

Name	Most recent activity
Android	10 days ago
unknown client	3 days ago
unknown client	3 days ago

The screenshot shows the "Personal - Nextcloud" settings page at <http://localhost:8080/index.php/settings/personal#devices>. A red number '1' is in the top right corner of the window. The left sidebar has links for Personal info, Sessions, Devices, Sync clients, TOTP Second-factor Auth, and Federated Cloud. The main content area is titled "Devices" and says "You've linked these devices." It lists four devices with columns for Name and Most recent activity:

Name	Most recent activity
Android	10 days ago
unknown client	3 days ago
unknown client	3 days ago
Company Phone	seconds ago

A note below the table says: "A device password is a passcode that gives an app or device permissions to access your ownCloud account." There is a text input field containing "YDIPP-FJMVR-TEJDU-EHXDP" and a "Done" button. At the bottom, there is a "Language" section with "English" selected and a "Help translate" link.

10.3 Device-specific passwords and password changes¹

For password changes in external user backends the device-specific passwords are marked as invalid and once a login ² of the user account with the main password happens all device-specific passwords are updated and work again.

CHAPTER 11¹

External Storage²

11.1 Configuring external Storage³

The External Storage application allows you to mount external storage services, such as Amazon S3, SMB/CIFS⁴ fileservers and FTP servers... in Nextcloud. Your Nextcloud server administrator controls which of these are available to you. Please see Configuring External Storage (GUI) in the Nextcloud Administrator's manual for configuration howtos and examples.