



ownCloud User Manual

Release 6.0

The ownCloud developers

February 20, 2015

CONTENTS

| | | |
|----------|---|-----------|
| 1 | ownCloud 6.0 User Documentation | 1 |
| 1.1 | Web interface | 1 |
| 1.2 | Files & Synchronization | 1 |
| 1.3 | Contacts & Calendar | 2 |
| 1.4 | Documents | 2 |
| 1.5 | Bookmarks | 2 |
| 1.6 | Backup | 2 |
| 1.7 | External storage | 2 |
| 1.8 | Indices and tables | 2 |
| 2 | The ownCloud Web Interface | 3 |
| 2.1 | Overview | 3 |
| 3 | Files & Synchronization | 7 |
| 3.1 | Accessing your Files (Web Interface) | 7 |
| 3.2 | Accessing your Files (WebDAV) | 9 |
| 3.3 | Version Control | 17 |
| 3.4 | Deleted Files | 17 |
| 3.5 | Desktop Synchronization | 18 |
| 3.6 | Files Encryption | 18 |
| 3.7 | Storage Quota | 19 |
| 3.8 | Big Files | 21 |
| 4 | Contacts & Calendar | 23 |
| 4.1 | Using the Contacts App | 23 |
| 4.2 | Using the Calendar App | 28 |
| 4.3 | iOS - Synchronize iPhone/iPad | 32 |
| 4.4 | Synchronizing with OS X | 33 |
| 4.5 | Thunderbird - Synchronize Addressbook | 34 |
| 4.6 | Synchronizing with KDE SC | 35 |
| 4.7 | Troubleshooting | 39 |
| 5 | Using the Bookmarks App | 41 |
| 5.1 | The main interface | 41 |
| 5.2 | The Bookmarklet | 42 |
| 6 | Documents | 43 |
| 6.1 | The main interface | 43 |
| 7 | User Account Migration | 47 |

| | | |
|-----------|-----------------------------|-----------|
| 7.1 | Export | 47 |
| 7.2 | Import | 47 |
| 8 | Changing Preferences | 49 |
| 9 | External storage | 51 |
| 9.1 | Google Drive | 51 |
| 10 | Indices and tables | 57 |

OWNCLOUD 6.0 USER DOCUMENTATION

Welcome to ownCloud, your self-hosted file sync and share solution.

ownCloud is open source file sync and share software for everyone from individuals operating the free Community Edition, to large enterprises and service providers operating ownCloud Enterprise Edition. ownCloud provides a safe, secure and compliant file sync and share solution on servers you control.

With ownCloud you can share one or more folders on your PC, and sync them with your ownCloud server. Place files in your local shared directories, and those files are immediately synced to the server, and then to other PCs via the desktop client. Not near a desktop client? No problem, simply log in with the web client and manage your files there. The Android and iOS mobile apps allow you to browse, download and upload photos and videos. On Android, you may also create, download, edit and upload any other files, with the correct software installed.

Whether using a mobile device, a workstation, or a web client, ownCloud provides the ability to put the right files in the right hands at the right time on any device in one simple-to-use, secure, private and controlled solution. After all, with ownCloud, it's Your Cloud, Your Data, Your Way.

1.1 Web interface

This chapter contains a general overview how you access ownCloud from a Browser like Firefox, Chrome or Internet Explorer

- *The ownCloud Web Interface*

1.2 Files & Synchronization

This chapter contains information about accessing your files via WebDAV and Synchronization.

- *Accessing your Files (Web Interface)*
- *Accessing your Files (WebDAV)*
- *Desktop Synchronization*
- *Version Control*
- *Deleted Files*
- *Files Encryption*
- *Storage Quota*

- *Big Files*

1.3 Contacts & Calendar

Contacts & Calendar web interface, export, import and synchronization.

- *Using the Calendar App*
- *Using the Contacts App*
- *iOS - Synchronize iPhone/iPad*
- *Synchronizing with KDE SC*
- *Synchronizing with OS X*

1.4 Documents

Documents allows users collaboratively edit rich-text documents at the same time.

- *Documents*

1.5 Bookmarks

Web interface for managing your bookmarks.

- *Using the Bookmarks App*

1.6 Backup

Import and export your user account settings.

- *User Account Migration*

1.7 External storage

Mount external storages into ownCloud.

- *External storage*

1.8 Indices and tables

- *genindex*

THE OWNCLOUD WEB INTERFACE

You can connect to ownCloud with your web browser by pointing it to the address that you have received from your service provider. In case you are administering the server yourself, have a look at [ownCloud Administrators Manual](#).

When you enter the URL, you will receive a page that is similar to the one depicted below:

Login with the user name and password with you have received from your service provider. If you have set up the server yourself, log in with the user name which you have created during the setup process. You can add further users through the settings, or by hooking up a user backend, such as LDAP.

2.1 Overview

After clicking the *Log in* button, you will be redirected to ownCloud's main web interface:

The web interface comprises of the following items:

1. **Navigation bar:** Allows navigation between different parts of ownCloud, provided by apps. Not all apps depicted in this screenshot are installed and enabled by default.
2. **Application view:** This is where apps show their content. By default, this will show the files and directory (file view) of your user on the ownCloud installation.
3. **New/Upload button:** This allows you to create new files or upload existing ones from your device. Note that you can also drop files from Explorer or Finder onto the ownCloud file view and they will get uploaded to ownCloud. With *New* button, you can create a text file, folder or download a file from the provided URL.
4. **Search/Settings:** Search allows you to look for files and directories. Currently, ownCloud provides a full text search. If full text search does not work, administrators need to enable this app from app settings. Settings menu provides access to the settings menu, where you can change your personal settings, such as the interface language or your password. You can also retrieve the WebDAV URL (see next chapter) and show your quota. Administrators will also get access to user management (*Users*), the apps settings (*Apps*) and administrative settings (*Admin*) including access to ownCloud's log. You will also find logout button in this menu.
5. **Apps:** This button is only visible to administrators. Using this button allows administrators to enable/disable apps.

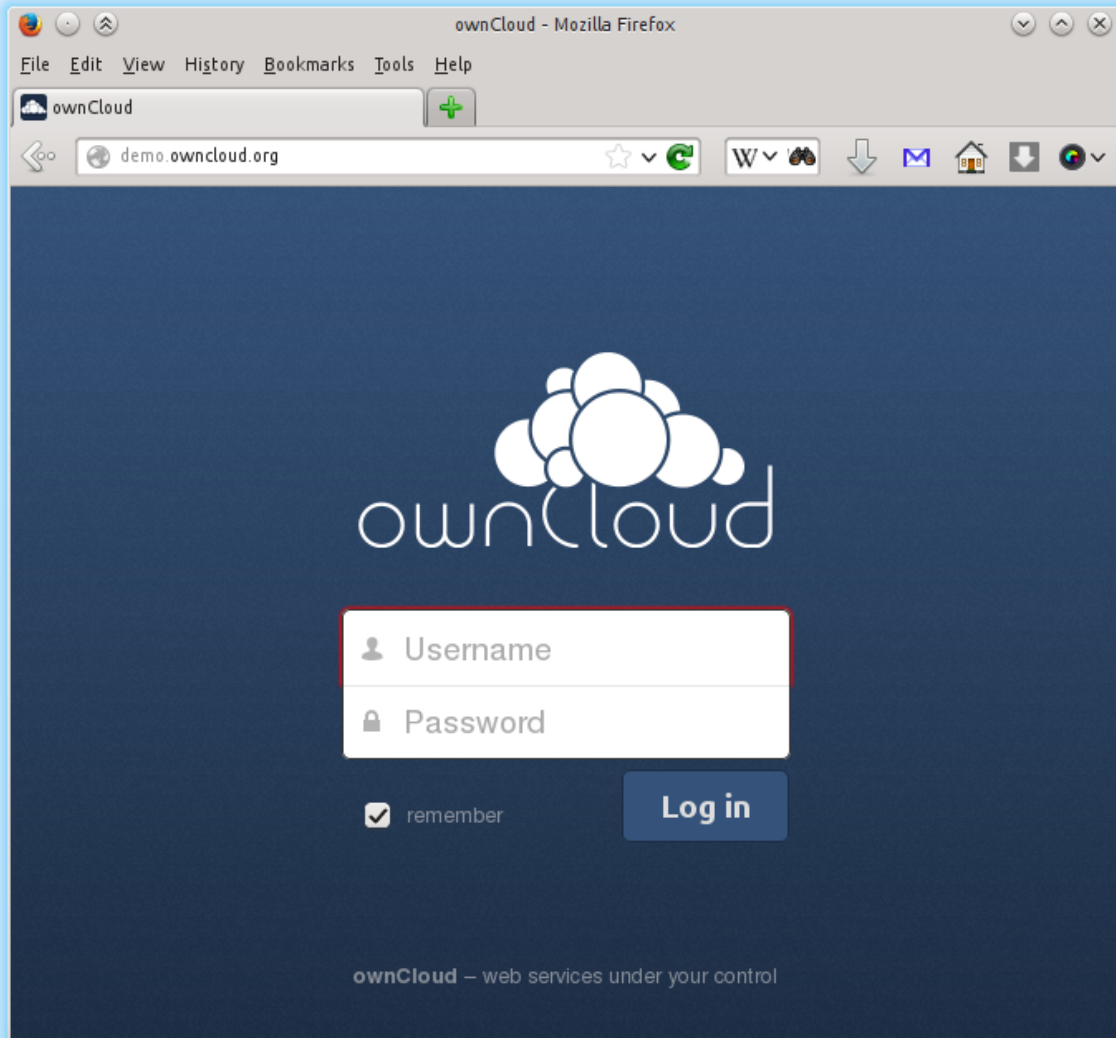


Figure 2.1: The ownCloud login screen



Figure 2.2: The ownCloud main interface with the essential elements numbered

FILES & SYNCHRONIZATION

3.1 Accessing your Files (Web Interface)

Your ownCloud files can be accessed from anywhere by using your ownCloud's web interface. In the files app, you can view (if a common type), move, rename, download, share and delete your files easily. If versioning app is enabled, you can also revert a file to specific version. See [Version Control](#) for details.

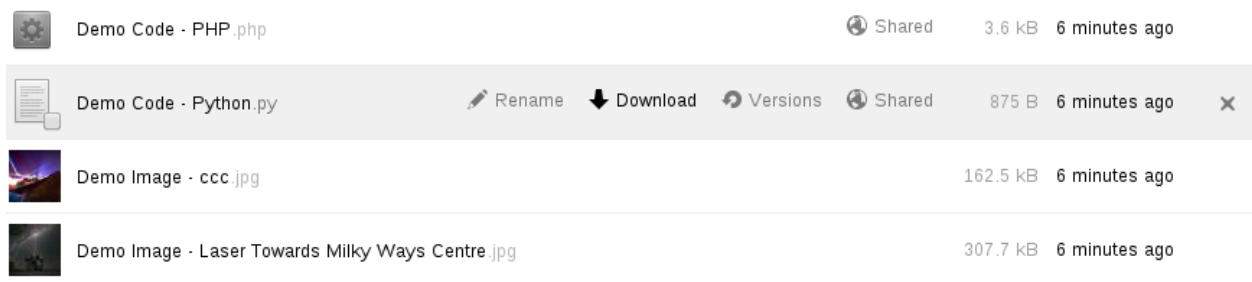


Figure 3.1: Files app on ownCloud web interface

With ownCloud 6, you can now see file thumbnails next to the filenames. By hovering your cursor on a file, you will be provided with some file operations. You can use rename, download, share buttons to perform those actions or click on the cross icon at the rightmost location to remove the hovered file. If the file is an editable office file, it will also show *Edit* button to open the file in documents app (if this app is enabled).

3.1.1 Navigating inside your ownCloud

To navigate through folders in your ownCloud, you can simply click on a folder name. The navigation bar will show your current directory:

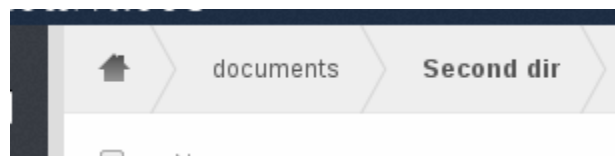


Figure 3.2: Navigation bar

You can click on one of the upper directories to navigate up or use home icon to navigate back into your root folder.

3.1.2 Creating/uploading files

You can create files by simply clicking on *New* button on files app. The *New* button will provide three options to choose from:

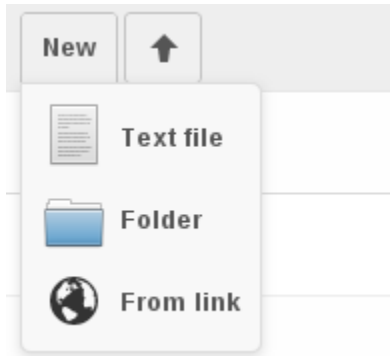


Figure 3.3: New button options

- *Text file* will create a simple text file and add into the current folder in your ownCloud.
- *Folder* will create a folder in current folder.
- *From link* will download the file from the provided link and place it into the current folder.

3.1.3 Selecting files

You can select one or more files by clicking on small thumbnails or icons of the files. To select all files in the current directory, use the checkbox just above the first file/folder on the list.

If you select multiple files, selected files can be deleted or downloaded as ZIP by using the buttons just above of the file list. If download button is not visible, this means that administrator had disabled this feature.

3.1.4 Viewing files

ownCloud can display uncompressed text files, OpenDocument files, PDFs, and image files by simply clicking on the file name. If displaying of a file is not possible, a download process will start.

3.1.5 Moving files

In ownCloud web interface, file(s) can be moved by dragging and dropping them into a sub-directory. If you would like to move a directory to an upper directory, drag the file(s) into one of the folders shown in navigation bar (depicted above).

3.1.6 Sharing files

Any file/folder on ownCloud can be shared to download with a local user, group or any person online with a public link. Shared files/folders will show a *Shared* text next to their names.

To share a file/folder, hover your cursor on an item in the files app and click *Share*. You will be provided with some options:

Figure 3.4: Share dialog

- The first field is to share this file/folder with local users/groups. This is very useful if you are in a company and want to create a quick share with a colleague.
- If you click on *Share link*, the other options will be visible. Since this link allows everyone to download this file/folder, you may want to protect this share with a password. To do that, click on *Password protect* and set a password.
- If this share is a folder, you will also have an option to enable uploads into this folder using the provided link. This is very useful to collect files from multiple users into same place easily.
- If your server is configured with a mail server, you can type e-mail addresses separated with space to send the link to multiple users.
- Finally, setting an expiration date will expiry the share after the specified date.

If you type a user and/or group to the *share with* field, you will be given extra sharing options such as informing via e-mail, letting users edit (create, update, delete, re-share) the share. To revoke permissions from users, simply click on cross icon on the same line with the users.

3.2 Accessing your Files (WebDAV)

Your ownCloud instance can be accessed on every platform via the web interface. There are also options to integrate it with your desktop.

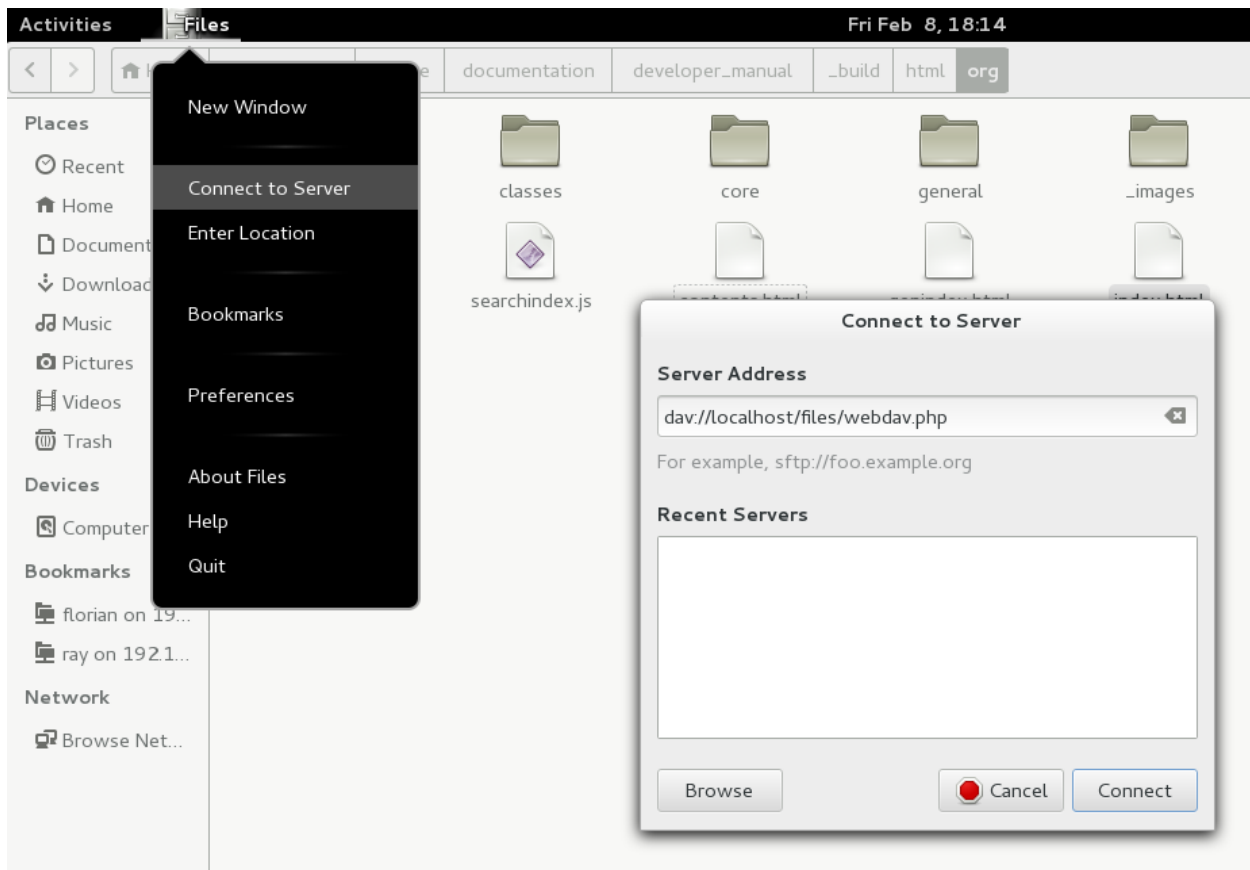
Note: You will have to adjust **example.org/** to the URL of your ownCloud server installation

3.2.1 Linux

Gnome 3/Nautilus

The URL that you have to use to connect to the ownCloud installation in nautilus is:

```
davs://example.org/owncloud/remote.php/webdav
```



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

KDE/Dolphin

Click in the address area and enter:

```
webdav://example.org/owncloud/remote.php/webdav
```



or:

1. Open Dolphin and click on where it says Network in the left hand Places column.
2. Click on the icon labeled **Add a Network Folder**.
3. It should come up with WebDAV already selected. Make sure it is and then click **Next**.
4. Enter the following settings:
 - Name: The name you'll see in the **Places** bookmark, for example ownCloud
 - User: Your ownCloud username you use to log in, for example admin
 - Server: Your ownCloud domain name, for example **example.org** (without **http://** before or directories afterwards).
 - Folder: Enter:


```
owncloud/remote.php/webdav
```
5. Create icon checkbox: Tick to get a bookmark in the Places column
6. Port & Encrypted checkbox: Leave as it is unless you have special settings or an SSL certificate.

Mounting from command line

1. Install the WebDAV support using the davfs package. On Debian/Ubuntu, you can use:


```
sudo apt-get install davfs2
```
2. Reconfigure davfs2 to allow access to normal users (select Yes when prompted):

```
sudo dpkg-reconfigure davfs2
```

3. Add the users you want to be able to mount the share to the davfs2 group:

```
sudo usermod -aG davfs2 <user>
```

4. Edit `/etc/fstab` and add the following line for each user who wants to mount the folder (with your details where appropriate):

```
example.org/owncloud/remote.php/webdav /home/<username>/owncloud davfs user,rw,noauto 0 0
```

Then, as each user who wants to mount the folder:

1. Create the folders **owncloud/** and **.davfs2/** in your home directory
2. Create the file `secrets` inside **.davfs2/**, fill it with the following (with your credentials where appropriate):

```
example.org/owncloud/remote.php/webdav <username> <password>
```

3. Ensure the file is only writable by you either through the file manager, or via:

```
chmod 600 ~/.davfs2/secrets
```

4. Run the command:

```
mount ~/owncloud
```

5. To automatically mount the folder on login, add the command you used in step 4 to `./ .bashrc`

Known Issues

Problem: Resource temporarily unavailable

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

```
use_locks 0
```

Problem: Certificate warnings

Solution: If you use a self-signed certificate, you will get a warning. If you are willing to take the risk of a man in the middle attack, run this command instead:

```
echo "y" | mount ~/owncloud > /dev/null 2>&1
```

3.2.2 MacOS

Note: Finder suffers from a [series of implementation problems](#) and should only be used if the ownCloud server runs on **Apache** and **mod_php**

In the Finder, choose **Go > Connect to Server**, type the address of the server in the **Server Address** field, and click **Connect**.



The URL that you have to use to connect to the ownCloud installation in finder is:

`http://example.org/owncloud/remote.php/webdav`



For details, check the respective [vendor documentation](#) at the Apple website.

3.2.3 Windows

For Windows a separate WebDAV client is recommended to access the files from your server. Choose one from the [WebDav Project](#) page

Should you have to use the native implementation then you can assign ownCloud a drive letter. This allows you to browse files stored on an ownCloudserver the way you would files stored in a mapped network drive.

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

Note: Prior to mapping your drive, you will need to permit the use of Basic Authentication in the Windows Registry. The procedure is documented in [KB841215](#) and differs between Windows XP/Server 2003 and Windows Vista/7. Please follow the Knowledge Base article before proceeding, and follow the Vista instructions if you run Windows 7.

Mapping via the command line

Suppose your ownCloud is installed at **<https://example.org/owncloud>**, that is, entering this URL in your web browser will bring up the login screen. Running:

```
net use Z: https://example.org/owncloud/remote.php/webdav /user:youruser yourpassword
```

will map the files of your ownCloud account to the drive letter Z:. An alternative syntax is:

```
net use Z: \\example.org@ssl\owncloud\remote.php\webdav /user:youruser yourpassword
```

Appending **/persistent** makes the connection persistent across reboots.

You can also mount your ownCloud via HTTP, leaving the connection unencrypted. Use either of the following syntaxes:

```
net use Z: http://example.org/owncloud/remote.php/webdav /user:youruser yourpassword
net use Z: \\example.org\owncloud\remote.php\webdav /user:youruser yourpassword
```

Please note that this allows anyone to sniff your ownCloud data with ease, especially on public WiFi hotspots. Plain HTTP should therefore only be used in conjunction with a VPN tunnel when used on Laptops.

Using Windows Explorer

Right-click on **Computer** entry and select **Map network drive....** Choose a local network drive to map ownCloud to. Finally, enter the address to your ownCloud instance, followed by **/remote.php/webdav**, e.g.

```
https://example.org/owncloud/remote.php/webdav
```

for an SSL protected server. Check **Reconnect at logon** to make this mapping persistent across reboots. If you want to connect as another user, check **Connect using different credentials**.

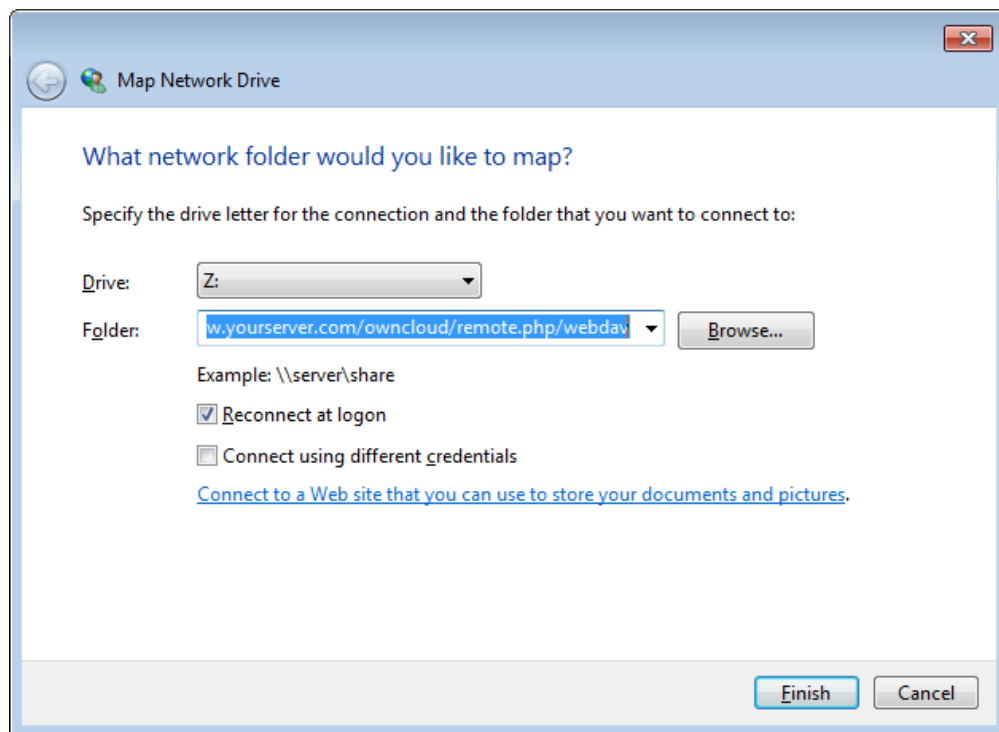


Figure 3.5: Mapping WebDAV on Windows Explorer.

After pressing **Finish**, Windows Explorer will map the network drive and your ownCloud instance should be available

Using Cyberduck (4.2.1)

Specify a server without any leading protocol information. e.g.:

Server example.org

The port depends on whether your ownCloud server supports SSL or not. Cyberduck requires that you select a different connection type depending on whether SSL is to be used ('WebDAV' or 'WebDAV (HTTPS/SSL)'):

Port 80 (for WebDAV) 443 (for WebDAV (HTTPS/SSL))

Use the 'More Options' drop-down menu to add the rest of your WebDAV URL into the 'Path' field. e.g.:

Path remote.php/webdav

Known Problems

Problem Windows refuses to connect via HTTPS

Solution 1 The Windows WebDAV Client does not support Server Name Indication (SNI) on encrypted connections. If you encounter an error mounting an SSL-encrypted ownCloud instance, please contact your provider about assigning a dedicated IP address for your SSL-based server.

Solution 2 The Windows WebDAV Client might not support TLSv1.1 / TLSv1.2 connections. If you have restricted your 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 I receive the error **Error 0x800700DF: The file size exceeds the limit allowed and cannot be saved.**

Solution 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_MACHINESYSTEMCurrentControlSetServicesWebClientParameters**. by clicking on **Modify**. In order to increase the limit to the maximum value of 4GB, pick **Decimal** and enter **4294967295** as value. Afterwards, reboot Windows or restart the **WebClient** service.

Problem Accessing your files from Microsoft Office via WebDAV fails.

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

Todo

document registry keys on file size limit and not complaining in no network cases

3.2.4 Sync Client

However, some applications only allow you to save to a local folder. To get around this issue, you can use the [ownCloud sync clients](#)

3.2.5 Mobile

To connect to your ownCloud server with the **ownCloud** mobile apps, use the base URL and folder only:

`example.org/owncloud`

No need to add remote.php/webdav as you do for any other WebDAV client.

There are apps in development for both [Android](#) and [webOS](#). Feel free to contribute, if you can! Right now you can use other apps to connect to ownCloud from your phone via WebDAV. [WebDAV Navigator](#) is a good (proprietary) app for [Android App](#) , [iPhone](#) & [BlackBerry](#).

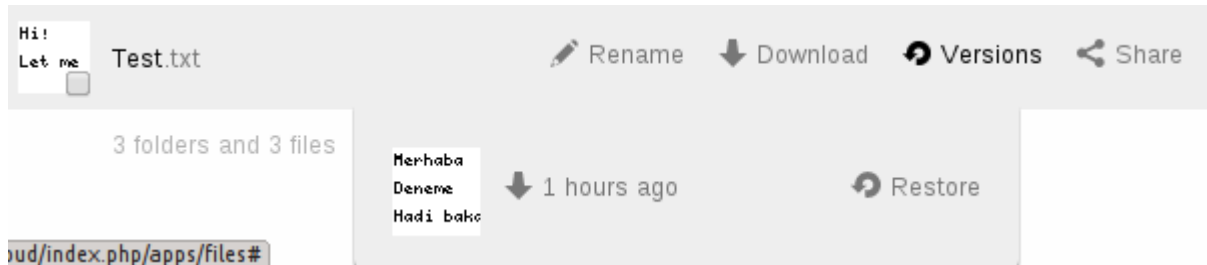
The URL for these is:

`example.org/owncloud/remote.php/webdav`

3.3 Version Control

ownCloud supports simple version control for files. Versioning creates backups of files which are accessible via the Versions link. This link 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]/versions, and made accessible using the above pages.

To restore a specific version of a file, hover your cursor on a file and click *Versions* link. If any version is available, you should see a list like the image below:



Clicking on *Restore* next to any version will revert the file to that version back.

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

- For the first second we keep one version
- For the first 10 seconds ownCloud keeps one version every 2 seconds
- For the first minute ownCloud keeps one version every 10 seconds
- For the first hour ownCloud keeps one version every minute
- For the first 24 hours ownCloud keeps one version every hour
- For the first 30 days ownCloud keeps one version every day
- After the first 30 days ownCloud keeps one version every week

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

Beside that the version app takes care to never use more than 50% of the users currently available free space. If the stored versions exceed this limit ownCloud delete the oldest versions until it meets the memory usage limit again.

3.4 Deleted Files

ownCloud keeps a copy of your deleted files in case you need them again. To make sure that the user doesn't run out of memory, the deleted files app manages the size of the deleted files for the user. The app takes care to never use more than 50% of your currently available free space. If your deleted files exceed this limit, ownCloud deletes the oldest versions until it meets the memory usage limit again.

Deleted files can be found by clicking on the *Deleted files* button on files app of web interface. You can either restore or permanently delete using appropriate buttons.

ownCloud also checks the age of deleted files every time new files are added to the deleted files. By default, deleted files stay in the trash bin for 180 days. The Administrator can adjust this value in the config.php by setting the `***trashbin_retention_obligation***` value. Files older than the `***trashbin_retention_obligation***` will be deleted permanently. Additionally, ownCloud calculates the maximum available space every time a new file is added. If the

deleted files exceed the new maximum allowed space ownCloud will expire old deleted files until the limit is met once again.

3.5 Desktop Synchronization

For synchronizing files with your desktop computer, we recommend using the [ownCloud Client](#) for Windows, Mac OS X and Linux.

The ownCloud Desktop Client enables you to connect to your private ownCloud Server. You can create folders in your home directory, and keep the contents of those folders synced with your ownCloud server. Simply copy a file into the directory and the ownCloud 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. Always have your latest files with you wherever you are.

Its usage is documented separately in the [ownCloud Desktop Client Manual](#).

Furthermore, It is possible to synchronize your ownCloud calendar and address book with a variety of different operating systems and devices. It is also possible to mount your ownCloud storage via WebDAV, which is also documented in the next chapters.

3.6 Files Encryption

ownCloud ships a encryption app, which enables encryption of all files stored in your ownCloud. Once the encryption app is enabled by the admin, all your files will be encrypted automatically. Encryption and decryption always happens server-side. This enables the user to continue to use all the other apps to view and edit their data. But this also means that the server administrator could intercept your data. Server-Side encryption is especially useful if you use external storages. This way you can make sure that the storage provider is not able to read your data.

Please remember. Once the encryption app is enabled your log-in password is required to decrypt and access your data. By default your data will be lost if you lose your log-in password. If you want to protect yourself against password loss, store your log-in password in a secure place or enable the recovery-key feature as described below.

3.6.1 What gets encrypted

The current version encrypts all your files stored in ownCloud except the following:

- old files in the trash bin (files which were deleted before the encryption app was enabled)
- image thumbnails from the gallery app and previews from the files app
- search index from the full text search app

All this data is stored directly on your ownCloud server, so you don't have to worry about exposing your data to a third party storage provider.

3.6.2 Decrypt your data again

If the encryption app is disabled after users have already stored encrypted data, users will be prompted to decrypt their files again in their personal settings. After this is done, they can continue to use their ownCloud without encryption.

3.6.3 Settings

Once the encryption app is enabled, you will find some additional settings on your personal settings page.

Recovery Key

If the admin enabled the recovery-key feature you can decide for yourself if you want to use this feature for your account. If you enable “Password recovery” the admin will be able to read your data with a special password. This allows him to recover your files in the event you lose your password. If the recovery-key is not enabled then there is no way to restore your files if you lose your log-in password.

Change Private Key Password

This option will be only available if your log-in password but not your encryption password was changed by your admin. This can happen if your ownCloud provider uses a external user back-end, e.g. LDAP, and changed your log-in password there. In this case you can set your encryption password to your new log-in password by providing your old and new log-in password. The encryption app only works if log-in password and encryption password is identical.

3.7 Storage Quota

ownCloud makes it possible to specify a storage quota for users which is the **maximum space** a user is allowed to use for files located in their individual home storage.

Note: When setting a quota, administrators need to be aware that it **only applies to actual files**, not application metadata. This means that when allocating a quota, they need to make sure there at least 10% more space available for a given user.

3.7.1 Checking the available space

You can check your available space by going to the “Personal” page from the top-right menu.

The available space of a given user is calculated using the following formula:

```
available_space = min(quota, disk_free_space) - used_space
```

`disk_free_space` is the space available on the partition on which the user’s home storage is located on the server. It could happen that the available space on that partition is less than the user’s quota.

3.7.2 Sharing

When sharing files or directories, their used space is counted in the owner’s quota.

Shared files

If user A shares a file F with user B, the size of F will be counted in user A’s storage, even if the file is modified or its size is increased by user B.

Shared directories

If user A shares a directory D with user B, any file that is modified or uploaded by user B inside of directory D will count in user A’s used space.

Resharing

When resharing a file or a directory, the used space is still counted in the quota of the owner who shared it initially.

Public sharing with upload permission

If user A publicly shares (share with link) a directory D and enables the “public upload” permission, people with the link will be able to upload files into D and their sizes will be counted in user A’s used space.

3.7.3 Excluded from quota

Metadata and cache

Application metadata and cached information are excluded from the total used space.

Such data could be thumbnails (icon previews, pictures app), temporary files, encryption keys, etc.

Some apps are also storing information directly in the database (not as files) like the *calendar* and *contacts* apps. This data is also excluded from the total used space.

Deleted files

When deleting files, these are moved/copied to the *trashbin* at first. These files do not count in the user’s used space.

For example with a quota of 10 GB, if the user has 4 GB used space and 5 GB in the trashbin, they will still see 6 GB free space. If the user uploads 6 GB of files at this point, the *trashbin app* will discard deleted files when necessary to make room for the new files.

Version Control

The size of older file versions does not count in the used space.

For example with a quota of 10 GB, if the user has 4 GB used space and 5 GB of older file versions, they will still see 6 GB free space. If the user uploads 6 GB of files at this point, the *versions app* will discard older versions when necessary to make room for the new files.

See *Version Control* for details about the version expiration behavior.

Encryption

When files are *encrypted*, they take slightly more physical space than the original files. Only the original size will be counted in the used space.

External storage

When mounting external storage, either as administrator or as user, the space available on that storage is not taken into account for the user’s quota. It is currently not possible to set a quota for external storage.

3.8 Big Files

There are a few default configuration settings that you will want to change to enable ownCloud to operate more effectively as a self hosted file sync and share server. When uploading through the web client, ownCloud is governed by PHP and Apache. As a default, PHP is configured for only 2 MB uploads. This is not entirely useful, so it is important to increase these variables to the sizes you want to support on your server. Ask your administrator to increase these variables for you or read the section in concern [within the Admin Documentation](#).

CONTACTS & CALENDAR

4.1 Using the Contacts App

The contacts app of ownCloud is like any other mobile contact app but with more functionality. Just as you open your account you will get the a default addressbook available. We will see later that Of course you can always add and remove addressbooks in here.

4.1.1 Adding contacts

There are two ways in which you can add contacts

1. Add them manually
2. Import a VCF file

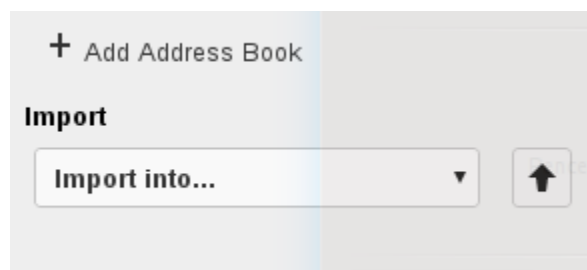
Importing

So first we'll check out how to import all the VCF files as they are a lot more faster way of creating contacts. Just below the contact list, click on the gear button:



Contact settings icon

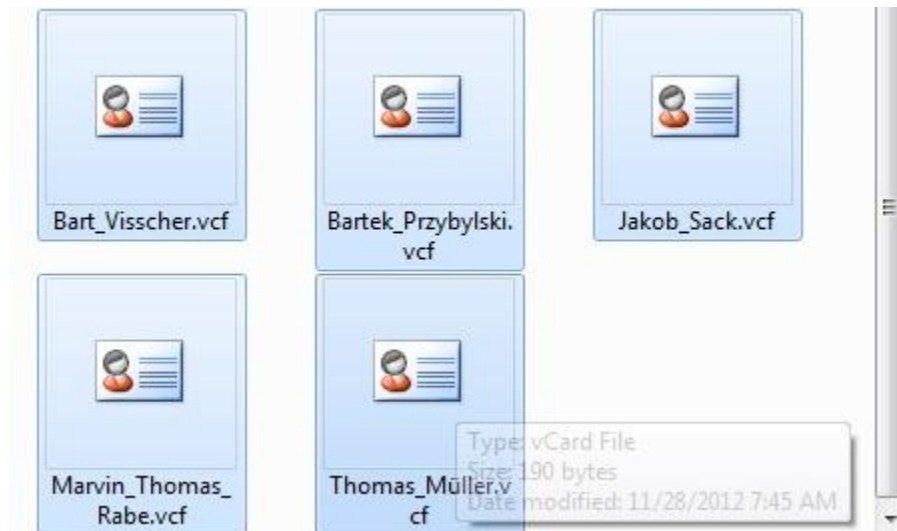
Once you've clicked it, an up arrow button which lets you upload files will be shown:



Contact file upload icon

After choosing an addressbook to import into, click on the arrow. The upload window will be opened and let you choose your files. You can upload the files one by one or upload all of them at one go.

Let us demonstrate. Open the directory in which you store all the files and then do the following Keep pressing CTRL and select the files to upload. After you are done just click on the open button After the upload it should look something like this in which all the names and contacts will be sorted alphabetically



Picking VCF files

After upload, the interface will automatically place your contacts into ownCloud.

Create contacts manually

On the left side of contacts app, you could see the new contact button (first one). Click on it. You can now see an empty contact in the main part of the interface. You have the ability to add all your informations about the contact: the name, the address, the e-mail, the telephone nr, etc.

Just click on a field and start typing the information. You can use the “Add Field” button to add another types of information for this contact.

When you want to remove an information of your contact, just click on little delete icon at the right of the field you want to remove.

Adding picture to the contact

There are two methods in which you can give a picture id to the specific contact

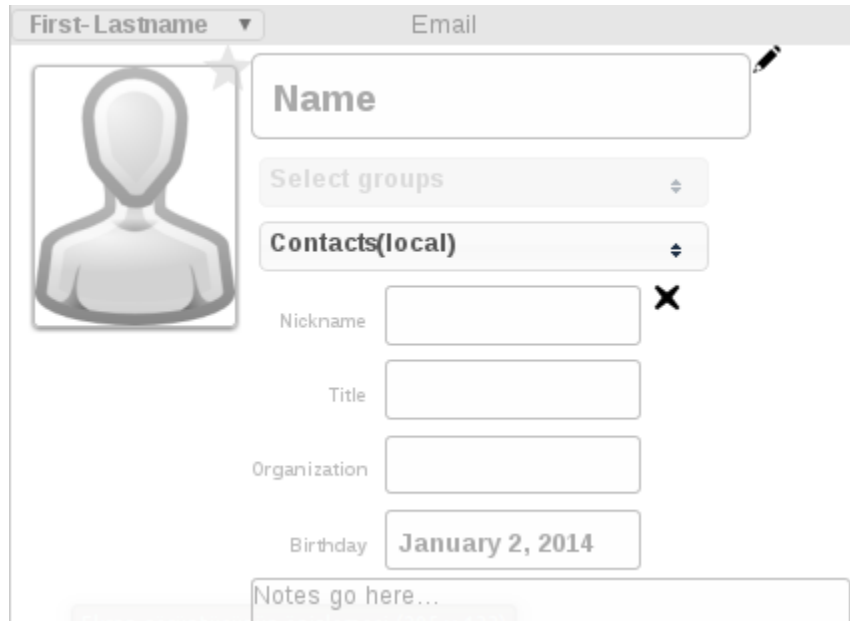
Contact picture options

1. **Direct upload**
2. **Select pics already uploaded in ownCloud files.**

After you have selected the picture for the contact you get an option to crop the picture to suit your requirements

Cropping contact picture

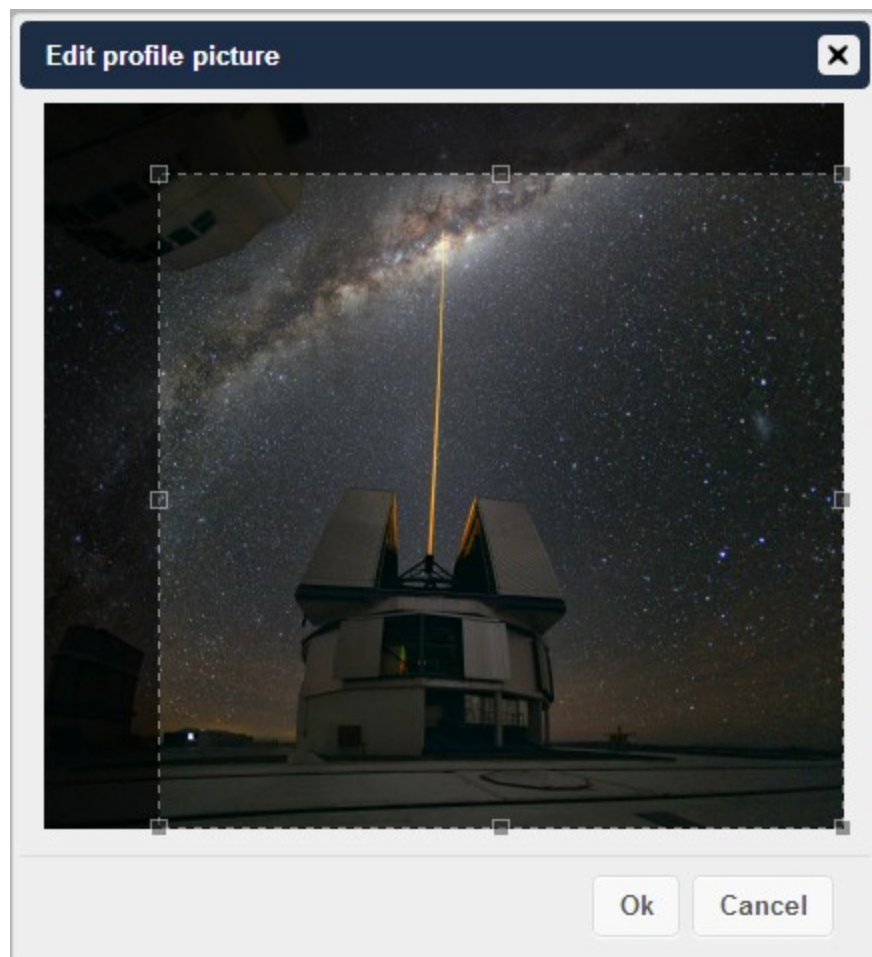
You can crop the picture however you wish and then press OK.



The image shows a contact form in ownCloud. At the top, there are two tabs: "First-Lastname" (selected) and "Email". Below the tabs is a profile picture placeholder (a grey silhouette) with a star icon to its right. To the right of the profile picture is a large text input field labeled "Name". Below the "Name" field is a "Select groups" dropdown menu, currently showing "Contacts(local)". Below the groups dropdown are several input fields: "Nickname" (with a red 'X' icon to its right), "Title", "Organization", and "Birthday" (which contains the date "January 2, 2014"). At the bottom is a text area labeled "Notes go here...".

Figure 4.1: Empty contact view

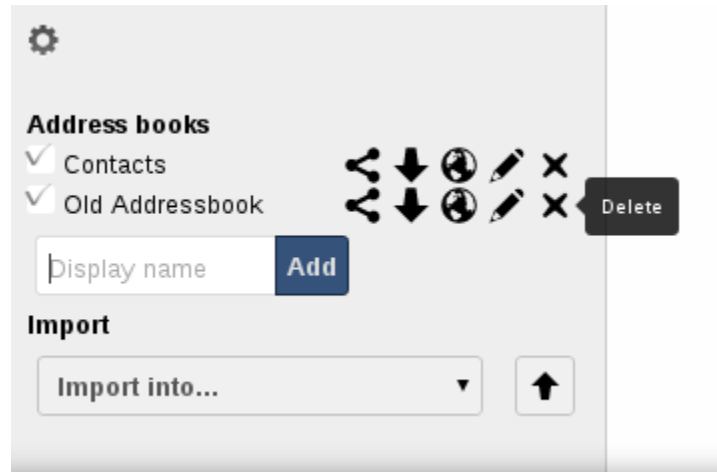




As you can see it is really easy to set things right in this app. It automatically picks up the First name, Middle name (if any) and the last name. You may add or delete any section you want for your own convenience.

4.1.2 Creating new addressbooks

When you click on settings button on bottom bar, you will have access to the application's settings. Then, you will be shown all available addressbooks to access the options.



Addressbook options

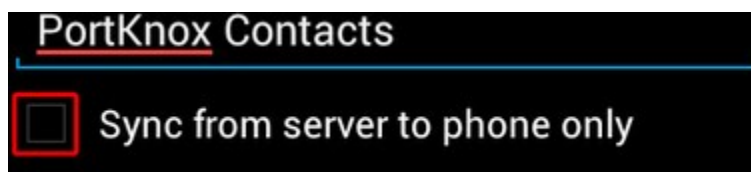
There, you have the ability to add, delete, download or share your addressbooks. Hover your cursor on every icon to see what they mean.

4.1.3 Keeping your addressbook in sync

One of the most important thing in any contact app is to keep it in Sync. You can sync this contact app to your phone which has the following OS's- Android and iOS

Syncing with Android

1. Install CardDAV- Sync free from Google play store by visiting [this link](#).
2. This app supports auto- configuration which is a Boon- after installing visit this link - `card-days://example.org/remote.php/carddav/` to auto-configure the app.
3. Enter your login details
4. After the app has checked your login details you may just select- Sync server to phone option
5. That's it there is nothing else to do for Android :)



Syncing your iOS device

Synchronizing the Address book

1. Open the settings application.
2. Select Mail, Contacts, Calendars.
3. Select Add Account.
4. Select other as account type.
5. Select Add CardDAV account.
6. For server, type <http://example.org/remote.php/carddav/principals/username>
7. Enter your user name and password.
8. Select Next.
9. If your server does not support SSL, a warning will be displayed. Select Continue.
10. If the iPhone is unable to verify the account information perform the following:
 - Select OK.
 - Select advanced settings.
 - Make sure Use SSL is set to OFF.
 - Change port to 80.
 - Go back to account information and hit Save.

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

Other Syncing options provided by ownCloud

1. For Android you may use official Android app which can be found [here](#).
2. And for iOS (iPhone and iPad) use their app which can be found [here](#).

4.1.4 It doesn't work!!!

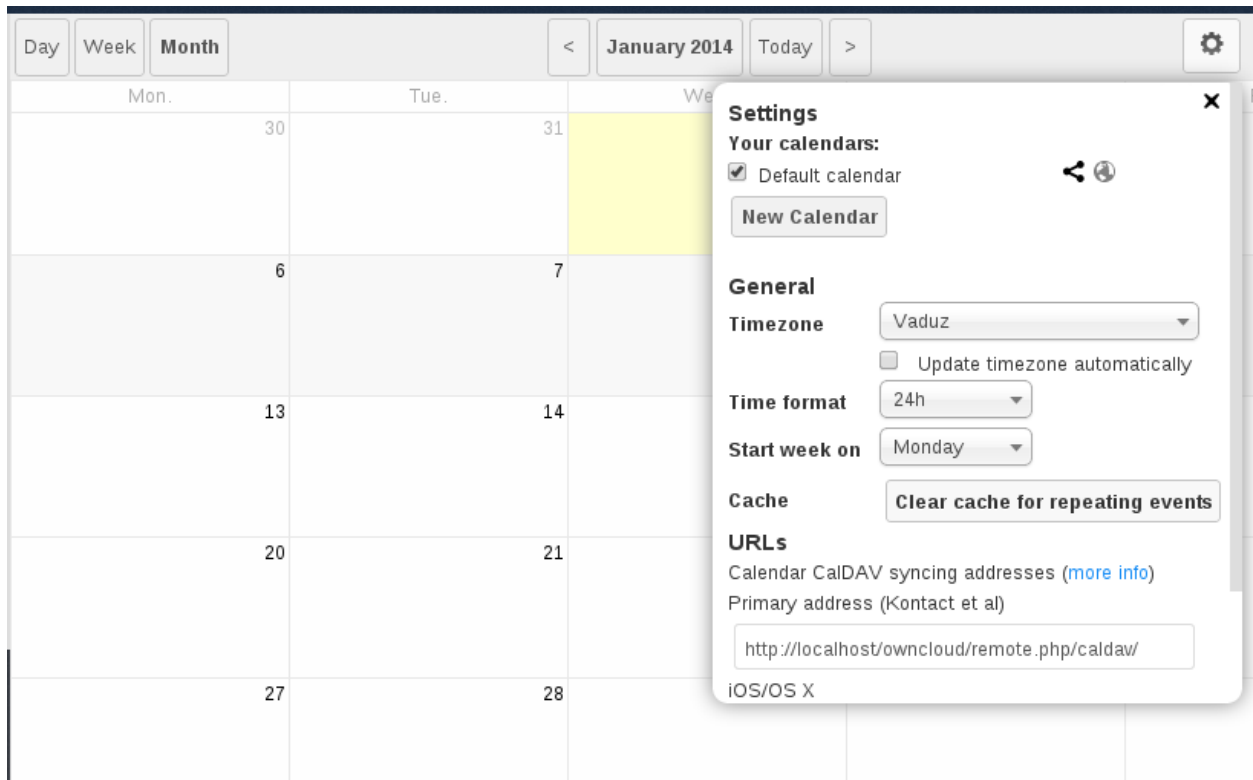
Are you having problems using the app? Have a look at the [Troubleshooting](#) guide.

4.2 Using the Calendar App

4.2.1 Creating a calendar

Calendar view

If you use the calendar the first time, there will be already a calendar called “Default calendar”. You can manage your calendars with a click on the “Calendar” button in the top right corner. In the dialog, which will appear, you can add, edit, export, enable, disable and delete your calendars. There will be also a link for CalDAV access.



4.2.2 Synchronising Calendars with CalDAV

Assuming you access your web interface via an address like this:

`http://ADDRESS`

Then you can access your calendars with CalDAV-compatible programs like Kontact, Evolution, Thunderbird using the following URL:

`http://ADDRESS/remote.php/caldav`

To use the ownCloud calendar with Apple iCal you will need to use the following URL, including the trailing slash:

`http://ADDRESS/remote.php/caldav/principals/username/`

Mozilla Lightning users need to this URL scheme:

`https://ADDRESS/remote.php/caldav/calendars/USERNAME/CALENDARNAME`

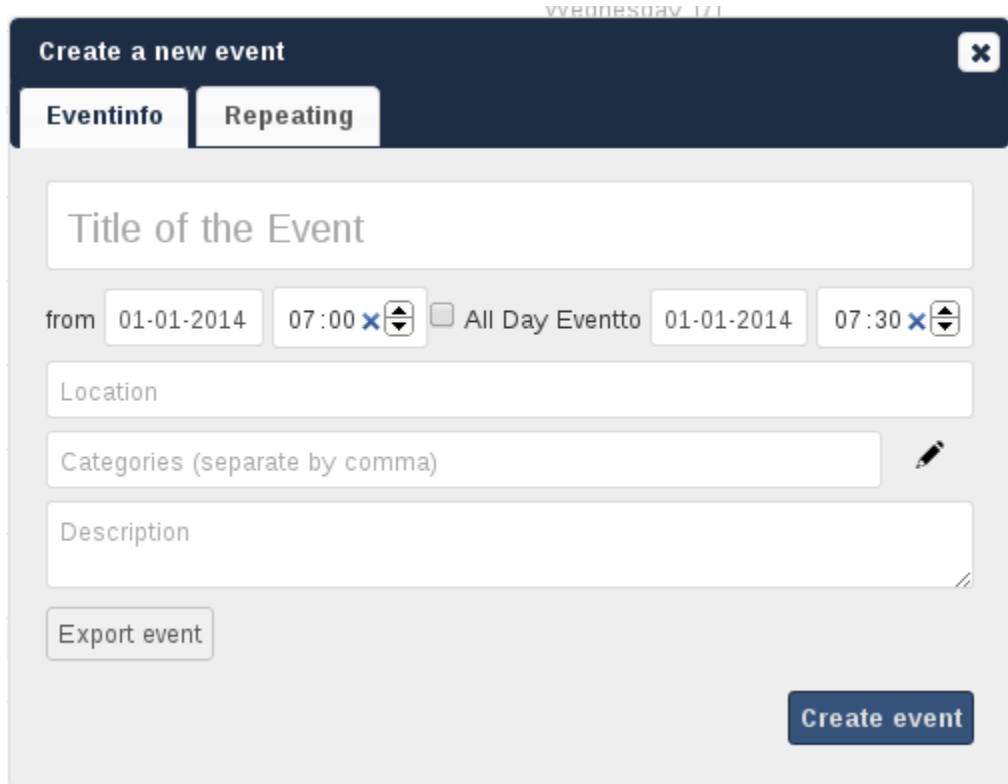
Example for a simple calendar: The "Default calendar" is referred to as "defaultcalendar", and the users' name here is "test".

The full URL (which on the picture can't be seen because of the short edit field) is then::

`https://localhost/owncloud/remote.php/caldav/calendars/test/defaultcalendar`

4.2.3 Creating events

To create an event just click on the date in the month view or choose the timeframe in the weekview. In the dialog which will appear you can enter your information like title, category, etc.



WEDNESDAY 1/1

Create a new event

Eventinfo Repeating

Title of the Event

from 01-01-2014 07:00 x All Day Event to 01-01-2014 07:30 x

Location

Categories (separate by comma)

Description

Export event

Create event

New event window

With the advanced options you can set the description, the location and the repetition rate of an event. If the repeating should end you can choose between setting the end by date or by occurrences. If you choose in the weekview all days from Monday to Friday it will automatically set the repeat rule to “every weekday”. If the interval of the weekview can be divided by two it automatically set the repeat rule to “Bi-Weekly”.

4.2.4 Exporting / Importing events

Export

Exporting an event

You can export either a single event or a whole calendar. If you want to export a single event click on it and press the export button in the bottom right corner. If you want to export a whole calendar use the “Calendar” button as described in the chapter “Creating a calendar”.

Import

Importing events

Import your calendar as iCal file using the files app. Just click on the calendar file to open the import dialog. You can import the calendar into a new calendar or into an already existing calendar.

Note: If the progress bar does not work properly, the folder `apps/calendar/import_tmp/` has probably no write permission.

1/1

VE000ES03V

Edit event

Eventinfo

Repeating

Share

Share with user or group

Not shared with anyone

Send Email

Shared via calendar

Not shared with anyone via calendar

Visibility to people shared with

Show full event ▼

Delete event

Save event

Import a calendar file

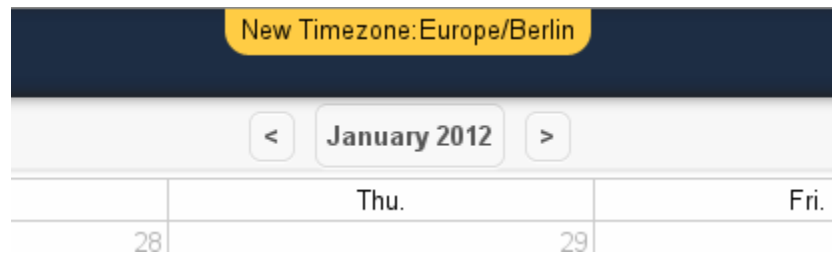
Please choose a calendar

Default calendar ▼

☐ Remove all events from the selected calendar

» Import »

4.2.5 Why is the calendar app asking for my current location?



Timezone set notification

The calendar needs your current position in order to detect your timezone. Without the correct timezone there will be a time offset between the events in ownCloud and your desktop calendar you synchronise with ownCloud. You can also set the timezone manually in the personal settings.

4.3 iOS - Synchronize iPhone/iPad

4.3.1 Calendar

1. Open the settings application.
2. Select Mail, Contacts, Calendars.
3. Select Add Account.
4. Select Other as account type.
5. Select Add CalDAV account.
6. For server, type ADDRESS/remote.php/caldav/principals/username
7. Enter your user name and password.
8. Select Next.
9. If your server does not support SSL, a warning will be displayed. Select Continue.
10. If the iPhone is unable to verify the account information perform the following:
 - Select OK.
 - Select advanced settings.
 - Make sure Use SSL is set to OFF.
 - Change port to 80.
 - Go back to account information and hit Save.

Your calendar should now be visible in the Calendar application

4.3.2 Address book

1. Open the settings application.
2. Select Mail, Contacts, Calendars.
3. Select Add Account.

4. Select Other as account type.
5. Select Add CardDAV account.
6. For server, type ADDRESS/remote.php/carddav/principals/username
7. Enter your user name and password.
8. Select Next.
9. If your server does not support SSL, a warning will be displayed. Select Continue.
10. If the iPhone is unable to verify the account information perform the following:
 - Select OK.
 - Select advanced settings.
 - Make sure Use SSL is set to OFF.
 - Change port to 80.
 - Go back to account information and hit Save.

Now should now find your contacts in the address book of your iPhone. If it's still not working, have a look at the [Troubleshooting](#) guide. ... 6.0 replace:: 6.0

4.4 Synchronizing with OS X

To use ownCloud with iCal you will need to use the following URL:

`http://ADDRESS/remote.php/caldav/principals/username/`

The setup is basically the same as with iOS using the path **ADDRESS/remote.php/caldav/principals/username/** to sync with ownCloud. For OS X 10.7 Lion and 10.8 Mountain Lion everything works fine, but OS X 10.6 (Snow Leopard) and older needs some fiddling to work. A user contributed the following:

1. Make sure, addressbook is not running. If it is, select the windows and press Command + Q to terminate it.
2. Navigate to **/Users/YOUR_USERNAME/Library/Application Support/AddressBook/Sources**. If you have all ready some kind of addressbook setup, it is likely you will see some folders named like this **BEA92826-FBF3-4E53-B5C6-ED7C2B454430**. Note down what folders there are now and leave the window open.
3. Open addressbook and try to add a new CardDav addressbook. At this point, it does not matter what information you enter. It will come up with the same error message you mentioned before when you click "Create". Ignore it and click "Create" again. A non-functional addressbook will be added.
4. Close addressbook again using Command + Q
5. Go back to the folder window from step 2. You will now see a newly created folder with another long string as its name.
6. Navigate to the newly created folder and edit the **Configuration.plist** with your favorite text editor.
7. Search for a section looking like this:

```
<key>servername</key> <string>http://:0(null)</string> <key>username</key> <string>Whatever_you_
```

8. Make it look like this. Please note that the :80 after **YOUR_DOMAIN** is important:

```
<key>servername</key> <string>http://YOUR_DOMAIN:80/owncloud/remote.php/carddav/principals/username/
```

9. Save the file and open addressbook again. It will not work yet.

10. Open the preferences for your ownCloud CardDAV-Account and enter your password.
11. You may have to restart addressbook once more. After this, it should work.

If it's still not working, have a look at the [Troubleshooting](#) guide.

There is also an easy [HOWTO](#) in the forum.

4.5 Thunderbird - Synchronize Addressbook

4.5.1 Addressbook

As someone who is new to ownCloud, New to SoGo Connector, and new to Thunderbird Addressbook... here is what you need in excruciating pithy detail you need to make this work (for all the other lost souls out there):

1. [Thunderbird](#) for your OS unless it comes with your OS distribution (Linux)
2. [Sogo Connector](#) (latest release)

With an installed Thunderbird mailtool, and installed SoGo Connector:

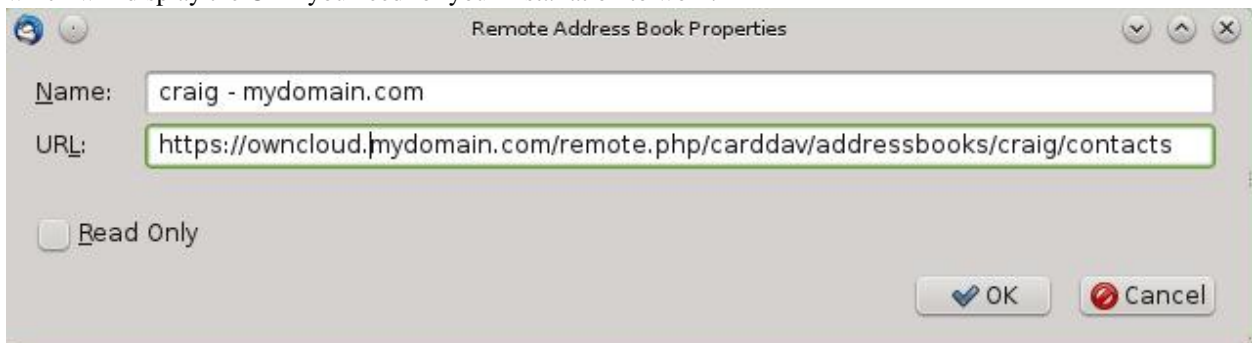
1. Thunderbird Addressbook is in the Thunderbird "Tools" Menu
2. In the Thunderbird Addressbook application:
 - "File > New > **Remote Addressbook**" (SoGo Connector added this)
 - "**Name:**" is the name you want to give your Addressbook in the Thunderbird addressbook bar area
 - "**URL:**" is found in your ownCloud Contacts area, that little Gear symbol



in the -bottom left- of the Contacts View (same symbol as found in the -top right- in the Calendar view). Then look for a little impeller symbol



which will display the URL you need for your installation to work.



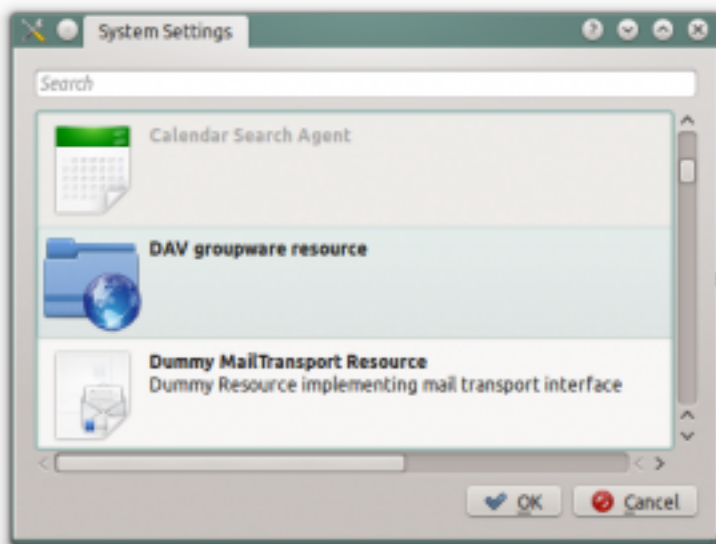
Once installed, synchronize (right click on your newly made remote addressbook and select "Synchronize"). You'll see your addressbook populate from ownCloud! Don't click "read only" above unless you don't want to modify your

ownCloud server addressbook, like it contains a listing of corporate contacts and is shared with lots of people, and you don't want a new user dragging it somewhere unintended.

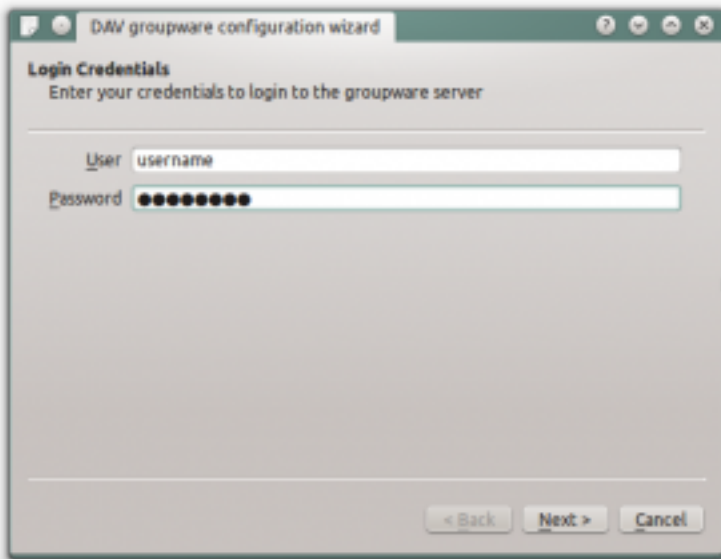
The rest of the details of dealing with Thunderbird addressbook are left to the reader... First thing I learned is dragging a contact to a different addressbook is a “move” operation. If you are worried about losing the contact, save it to a VCF file using ownCloud (Or LDIF using Thunderbird Addressbook) first! Like dragging from “ownCloud Addressbook” to “Personal Address Book” removes the contact from ownCloud Server (*deleting it from all the other synchronized installations*) and puts it in your Local Machine -only- Addressbook. So be careful or you'll have unintended consequences where you might have intended a “copy” operation.

Contact *Pictures* are also sync'ed!

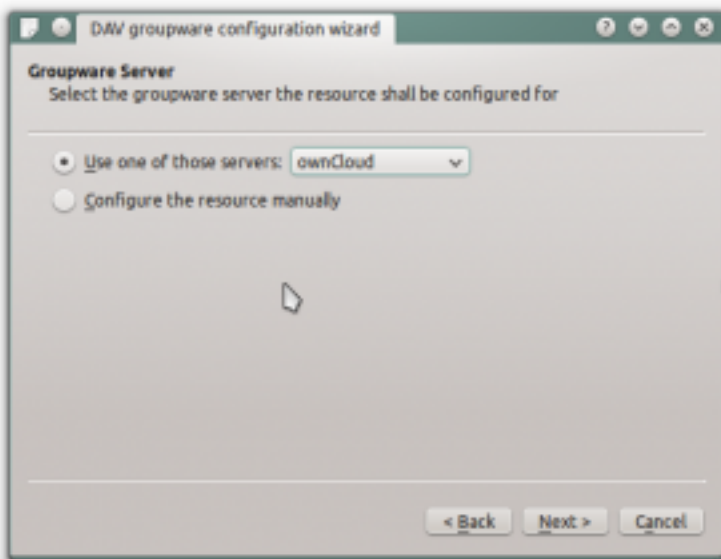
4.6 Synchronizing with KDE SC



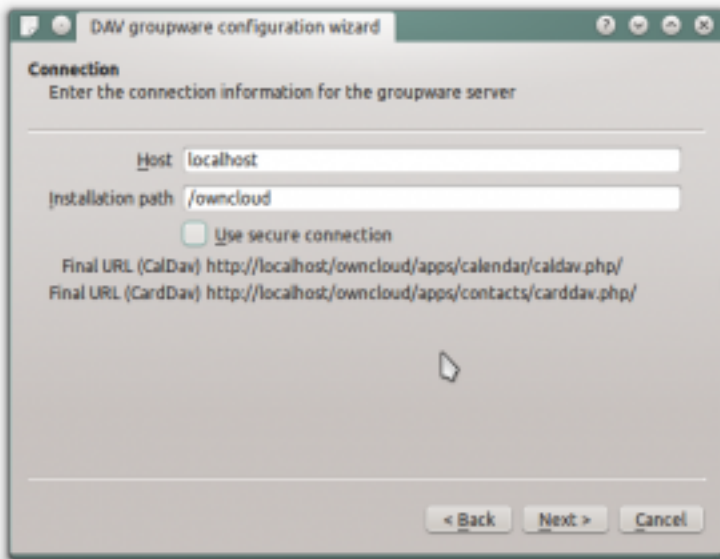
From KDE SC 4.8 and forward setting up ownCloud is very easy. From System Settings Personal Information/Akonadi Resources Configuration select DAV Groupware resource.



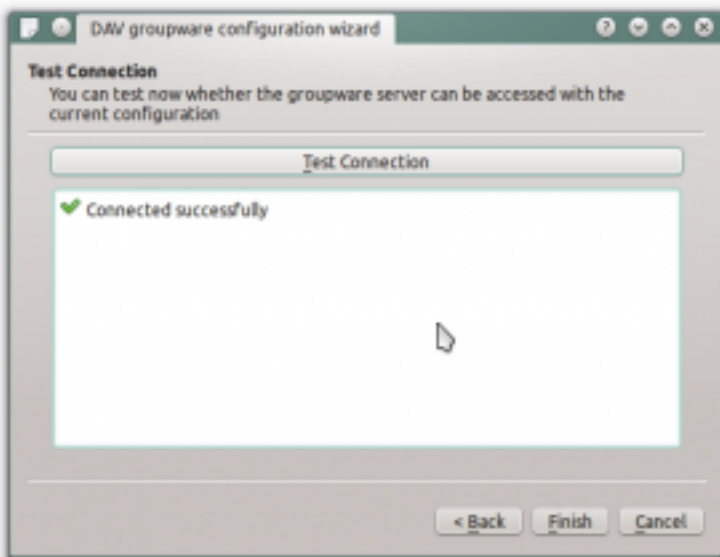
Enter your ownCloud username and password and click “Next”.



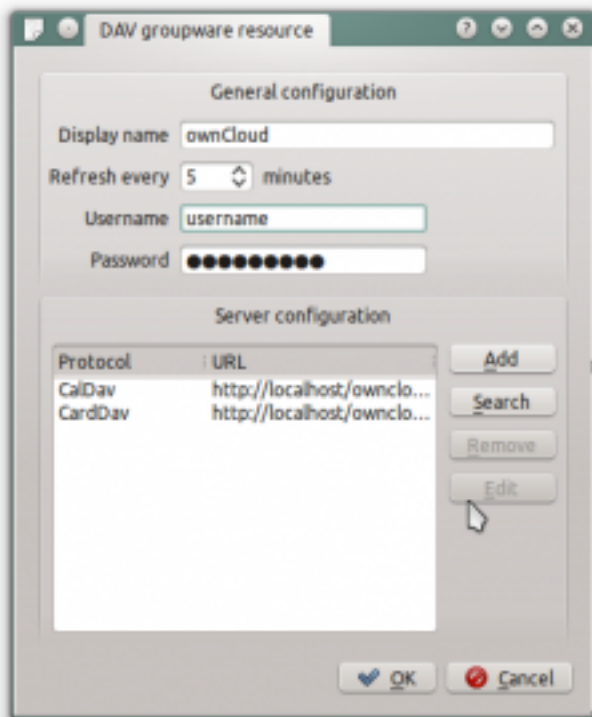
Select ownCloud in the drop down list and click “Next”.



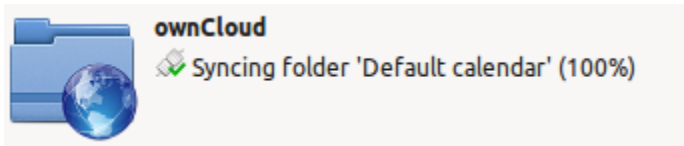
Enter the host name and installation path. If you do not use SSL remember to de-select “Use secure connection”.



Test the connection. If everything went well you should see a message like the one below.

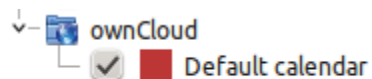


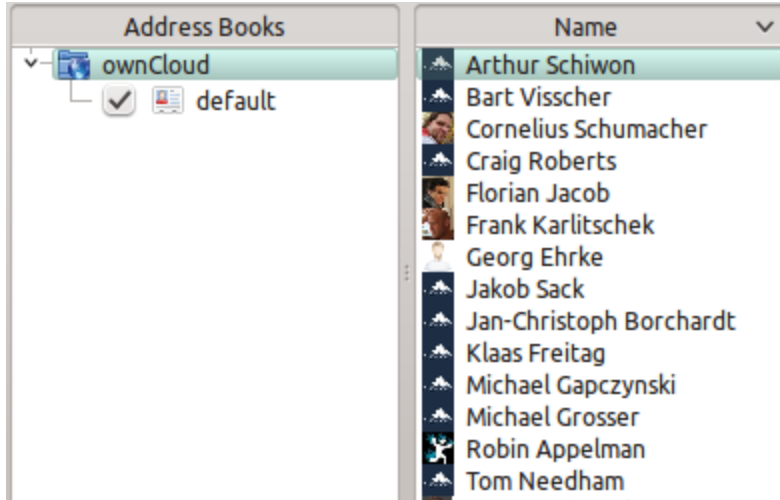
Click “Finish” and you will be able to change the display name and refresh interval.



Now you should see the Akonadi resource doing the first synchronization.

You can find the Contacts and Calendars in Kontact (or KOrganizer/KAddressbook if you run the programs separately.)





4.7 Troubleshooting

4.7.1 Debugging the issue

In a standard ownCloud installation the log level is set to “Normal”. to find any issues you need to raise the log level to “All” from the Admin page. Some logging - for example JavaScript console logging - needs manually editing the configuration file. Edit `config/config.php` and add `define('DEBUG', true);`:

```
<?php
define('DEBUG',true);
$CONFIG = array (
    ... configuration goes here ...
);
```

For JavaScript issues you will also need to view the javascript console. All major browsers have decent developer tools for viewing the console, and you usually access them by pressing F-12. For Firefox it is recommended to install the [Firebug extension](#).

4.7.2 Service discovery

Some clients - especially iOS - have problems finding the proper sync URL, even when explicitly configured to use it. There are several techniques to remedy this, which are described extensively at the [Sabre DAV website](#).

Apple iOS

Below is what have proven to work with iOS including iOS 7.

If your ownCloud instance is installed in a sub-folder under the web servers document root, and the client has difficulties finding the Cal- or CardDAV end-points, configure your web server to redirect from a “well-know” URL to the one used by ownCloud. When using the Apache web server this is easily achieved using a `.htaccess` file in the document root of your site.

Say your instance is located in the `owncloud` folder, so the URL to it is `ADDRESS/owncloud`, create or edit the `.htaccess` file and add the following lines:

```
Redirect 301 /.well-known/carddav /owncloud/remote.php/carddav
Redirect 301 /.well-known/caldav /owncloud/remote.php/caldav
```

If you use Nginx as web server, the setting looks something like:

```
url.redirect = (
    "^/.well-known/carddav" => "/owncloud/remote.php/carddav",
    "^/.well-known/caldav" => "/owncloud/remote.php/caldav",
)
```

Now change the URL in the client settings to just use ADDRESS instead of e.g. ADDRESS/remote.php/carddav/principals/username.

This problem is being discussed in the [forum](#).

BlackBerry OS 10.2

BlackBerry OS up to 10.2.2102 doesn't accept a URL with protocol `https://` in front of the server address. It will always tell you, that it cannot login on your server. So instead of writing

`https://address/remote.php/carddav/principals/username`

in the server address field, you have to write

`address/remote.php/carddav/principals/username`

4.7.3 Unable to update Contacts or Events

If you get an error like `PATCH https://ADDRESS/some_url HTTP/1.0 501 Not Implemented` it is likely caused by one of the following reasons:

Outdated lighttpd web server lighttpd in debian wheezy (1.4.31) doesn't support the PATCH HTTP verb. Upgrade to lighttpd `>= 1.4.33`.

Using Pound reverse-proxy/load balancer As of writing this Pound doesn't support the HTTP/1.1 verb. Pound is easily [patched](#) to support HTTP/1.1.

USING THE BOOKMARKS APP

If you want to add a bookmark to the Bookmarks application, you can either use the main interface or the bookmarklet.

5.1 The main interface

5.1.1 Add a bookmark

In the bookmark application, enter a URL into the top-left area of the content section. After adding an address, click on the pencil button to edit fields for the given address. The main ownCloud bookmark interface contains 3 fields at the top where you can enter the website address (or URL), the title of your bookmark, and a set of tags separated from each other by a space.

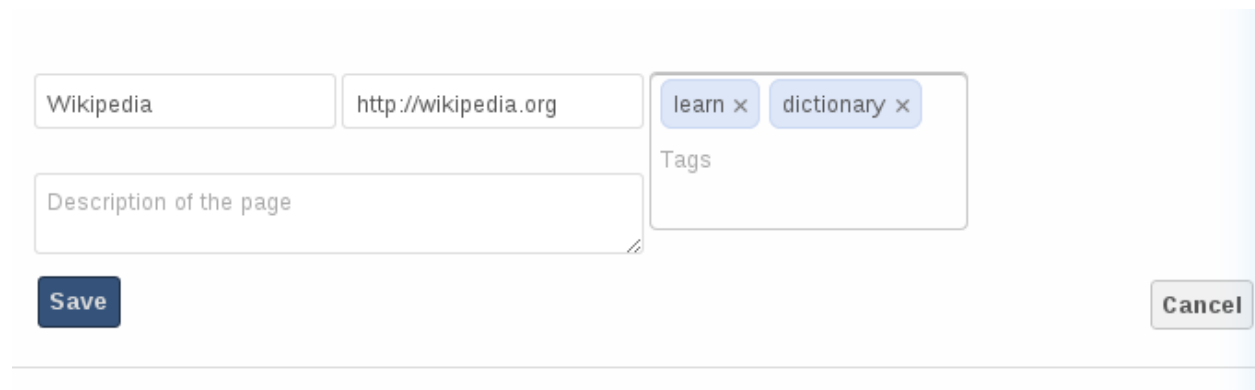


Figure 5.1: Adding a bookmark manually

In this example, we have added the page *http://wikipedia.org* with the title “Wikipedia” and some tags describing what Wikipedia is for an easier search later on.

5.1.2 Edit/Delete a bookmark

You also have the possibility to edit or delete a bookmark.

To edit a bookmark, hover over the bookmark and click on the pencil icon. The bookmark details will then be filled into the 3 fields at the top of the screen. Modify your bookmark to your needs then click the save button to persist the change.

To delete a bookmark, hover over the bookmark and click the cross icon.

5.1.3 Search

If you click on a tag, ownCloud will only display the bookmarks that are described with this tag.

You can also use the search bar of ownCloud in the top right of your screen.

Simply click on the “Bookmarks” menu in the sidebar to come back to the default view.

5.2 The Bookmarklet

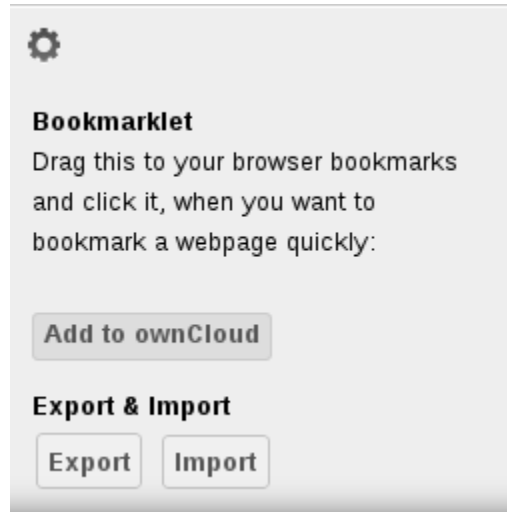


Figure 5.2: Bookmarklet link

The creator of this app understands that people won’t want to open the ownCloud bookmarks page to add a bookmark every time they see a cool site. This is why they have made this cool “bookmarklet”.

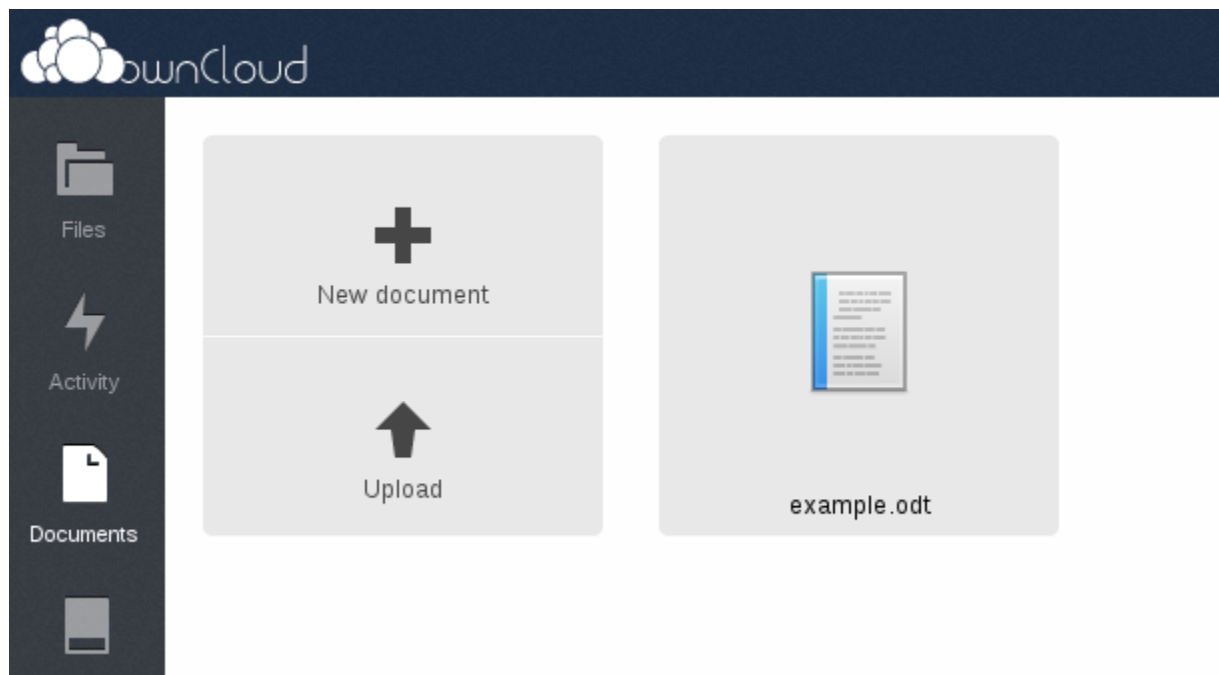
A bookmarklet is small button that you can drag and drop in your bookmarks. The next time you see a cool new site, click on this special bookmark to add the site to your ownCloud bookmarks.

To find this bookmark, click on the gear button at the bottom of the bookmarks app.

DOCUMENTS

Document editing is one of the new features in ownCloud 6. With this app, multiple users can edit rich-text simultaneously. The documents can be created from within the web-interface or existing documents can be uploaded. Sharing and editing can be done securely in the browser and be shared inside ownCloud or via a public link. User that have an account on the same server can be invited or public invitations can also be sent by email. The editing works on top of normal ODF files that are stored in ownCloud.

6.1 The main interface



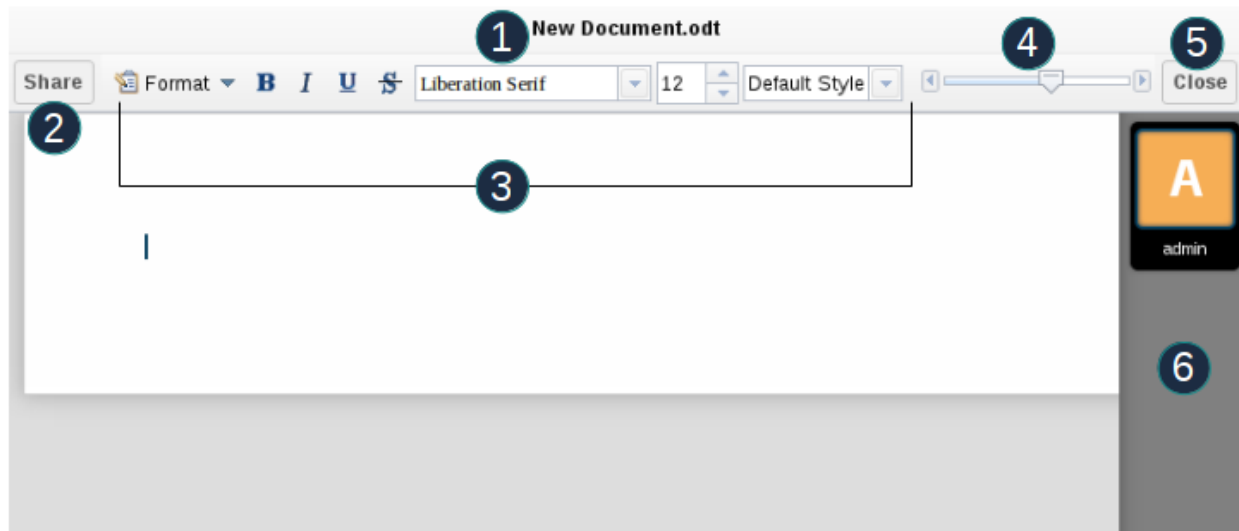
6.1.1 Create/Upload a Document

In the documents application, click on the respective buttons to create or upload a document into your ownCloud. The *New document* button will create a document named “New document.odt”. The extension ODT is an OpenDocument format, which many major office applications let you create/edit/view.

The *Upload* button allows you to upload any kind of document, but currently you can only edit ODT files within ownCloud.

6.1.2 Edit a Document

If ownCloud contains at least one ODT file, you can immediately start editing by clicking on the file within the documents app. Clicking on documents in files app will only display it. Below, you can see editing a newly created document file:



Here is the explanation of each field in the image shown above:

1. Clicking on the file name allows you to change filename.
2. Allows you to share the document to public, specific users or groups. Will be explained in detail in [Share a document](#) section.
3. Formatting toolbar lets you change text styles.
4. Zoom in/out
5. Close document by saving changes
6. Users currently editing this document

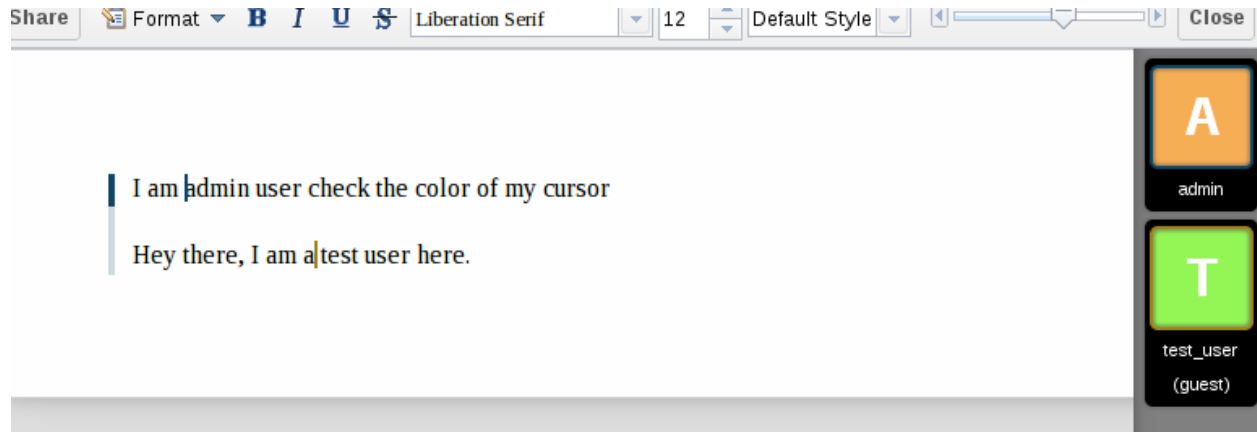
Collaboratively Editing a Document

To edit a file collaboratively, it needs to be shared with at least one user by using the *Share* button. When multiple users have permission to edit a document, they will be able to edit it at the same time. The cursor of all editing users will be the same color as the border color of their user picture.

If a user is not a local user (e.g. accessing the file using public link), he/she will be shown as guest in user list and they will type a nickname before editing.

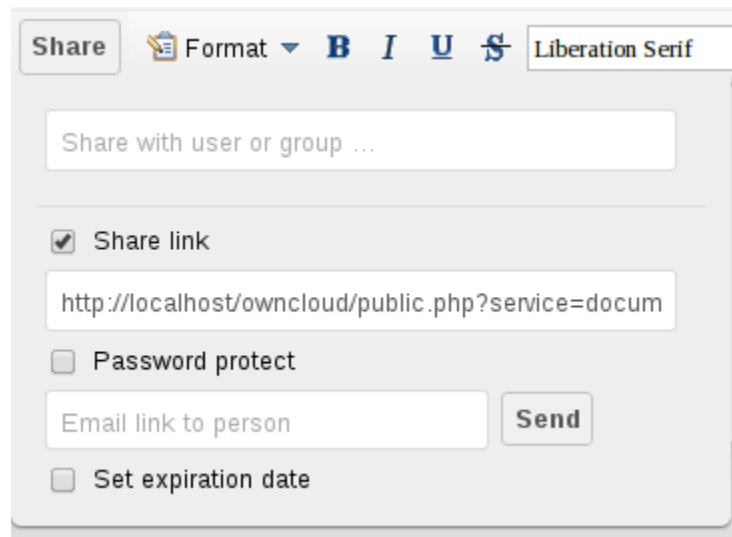
6.1.3 Delete a Document

A document can be deleted using the files app and following the same procedure as for other file types. Clicking on the cross icon deletes the selected document.



6.1.4 Share a Document

Document sharing has the same options as when sharing other files. While editing a document, you can use the *Share* button to enable other users to edit the document. This button will display all available options to share:



By default, you can enter local users or groups to share with. Checking *Share link* will enable sharing via a public link, for which you can set a password to prevent editing by unwanted users. Shares can also have an expiration date that will expire the link after a given date. ownCloud will send the public link to users by email by typing each email address into the email field. Separate multiple email addresses with a space.

To see all of the features of the ownCloud document app, watch the [video on YouTube](#).

USER ACCOUNT MIGRATION

User account migration support is provided by the `user_migrate` app. It is important to note that only data from apps that support migration will be migrated. While we encourage all apps to support migration, it is not a requirement and it the responsibility of the app developer.

7.1 Export

To export your user account, simply visit Settings > Personal and click on the 'Export' button. A compressed zip file will be generated on the fly and downloaded to your computer. This file includes all of your files and application data that was stored on your ownCloud account. You may use this as a method of backing up your personal account.

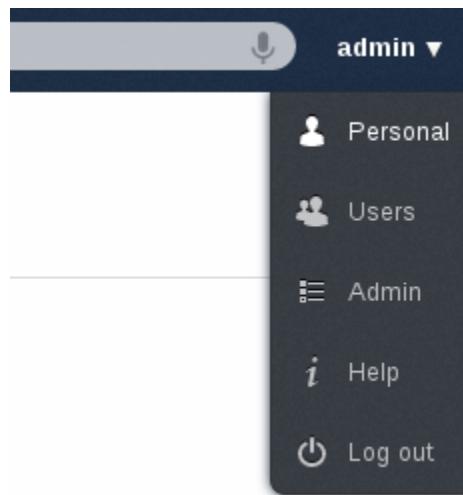
7.2 Import

To import your user account, you must first have an existing account on your new ownCloud install. Then follow this procedure:

1. Login to your new account on the new ownCloud instance
2. Navigate to the Settings > Personal page
3. Select the 'Import' button, and locate the zip file that you downloaded from your old ownCloud instance
4. Wait for the file to be uploaded and imported

Note: Your user account credentials will **not** be migrated.

CHANGING PREFERENCES



As a user, you can change your personal settings by clicking on your username on the top-right of ownCloud instance and choosing *Personal*.

If you are an administrator, you can also manage users and administer the server by using the related links. Those links will not be shown to a normal user.

This document will explain the default items on this page. Depending on the enabled applications, you may have more options listed.

- In the beginning of the page, you will see your usage and available quota.
- You can change your password. For that, you need to enter your current and new password in the field named *Password*. If you would like to be able to recover your password via e-mail, fill the e-mail field with the one that you currently using.
- By default, your image will have the initial of your username. This image is currently used in editing documents. You can either upload a new image or choose one from the existing images on your ownCloud to set.
- In this page, you can also change your web interface language if you want to override the browser settings.
- WebDAV link will allow you to only view and download your ownCloud files using a browser. You will still need your username and password to access this page.
- Documents app will have an option to specify the folder for newly created documents. You can set the folder here.
- This page will have more options if you have e.g. external storage app enabled.

EXTERNAL STORAGE

9.1 Google Drive

1. All applications that access a Google API must be registered through the “Google Cloud Console” which can be accessed using the following URL:

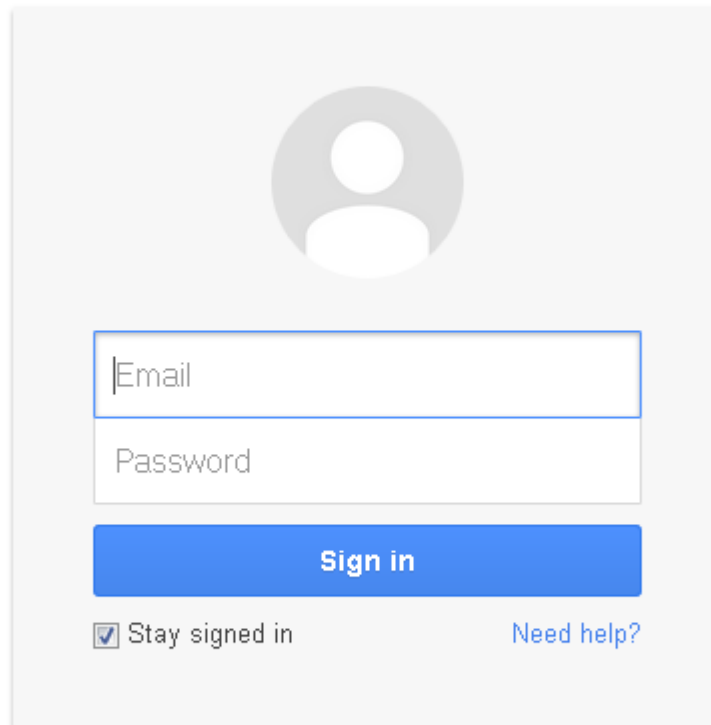
`https://cloud.google.com/console`

2. Enter your Google login credentials and press the `Sign in` button.



One account. All of Google.

Sign in to continue to Google Cloud Console



A light gray rectangular box containing a large gray circular icon with a white person silhouette. Below the icon are two stacked input fields: the top one is labeled 'Email' and the bottom one is labeled 'Password'. Below these fields is a blue button with the text 'Sign in' in white. At the bottom left of the box is a checkbox with a checkmark and the text 'Stay signed in'. At the bottom right is a blue link that says 'Need help?'.

[Create an account](#)


One Google Account for everything Google



3. Enter your verification code which has been sent to you by SMS or the Authenticator App and press the `Verify` button.




2-Step Verification

 A text message with your code has been sent to: **** *

Verify

☐ Don't ask for codes again on this computer

4. Create a project, e.g. “ownCloud-Project”



Projects

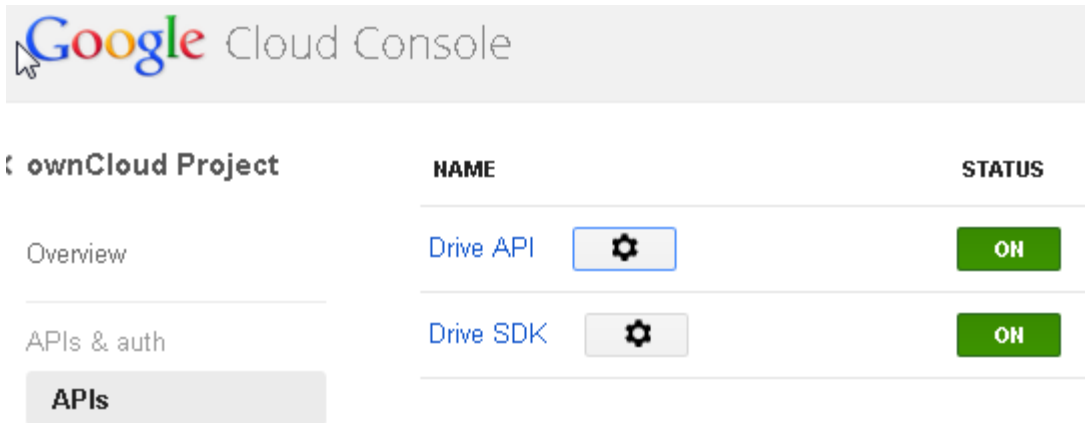
Account settings

CREATE PROJECT

PROJECT NAME

☐ ownCloud Project

5. Select the project and choose the “APIs & auth” menu entry.
6. Make sure that the “Drive API” and “Drive SDK” status is set to “ON” in the APIs menu.



7. Click on the gear-wheel button behind “Drive API” or “Drive SDK” and choose the “API access” menu entry.
8. Click on the `Create another client ID...` button and fill in the branding information.
9. Click on the `Next` button and create a new client ID by selecting “Web application” as application type.
10. Next to your site or hostname click on the `Edit settings ...` button.
11. Enter the following URLs to the “Authorized Redirect URIs” list and press the `Update`-button.

<https://your-internet-domain/owncloud/index.php/settings/personal>
<https://your-internet-domain/owncloud/index.php/settings/admin>

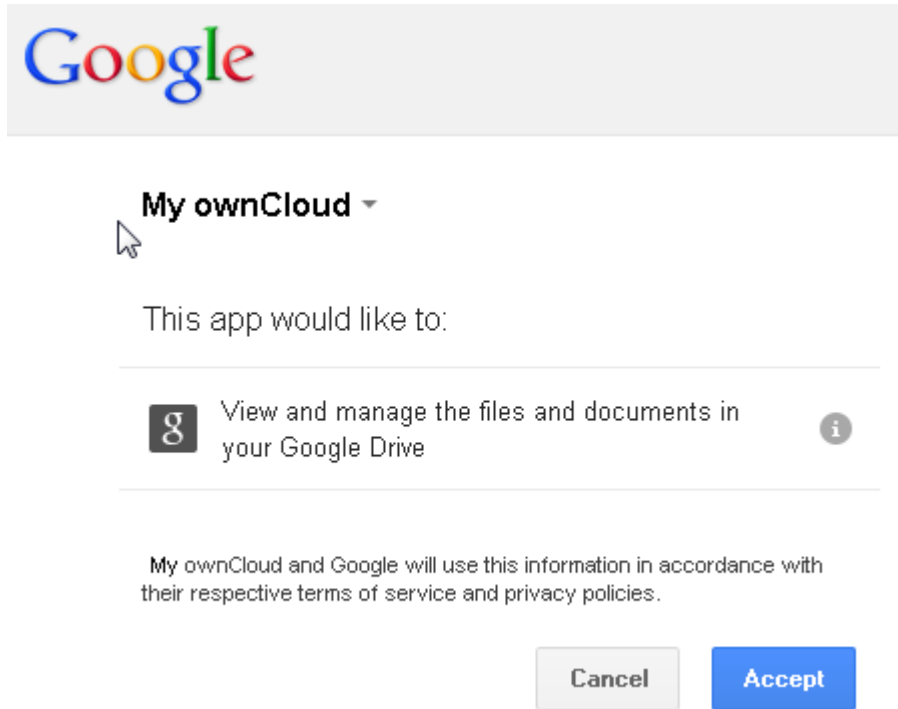
Note: Attention: Make sure that the URLs contain a valid internet domain name and that this domain name is also used to access ownCloud, otherwise these URLs will not be accepted. This does not mean that ownCloud need to be accessible from the Internet, but that the domain name is send to Google to verify if the redirect URIs are valid.

12. Login into ownCloud using the previously entered Internet domain.
13. Click on the `Add storage` button in the ownCloud Admin or Personal settings dialog to add a Google Drive.
14. Enter the folder name which should be used to access the share, e.g. “GDrive”, enter the Google OAuth 2.0 **Client ID** and **Client secret**. Additional for the admin settings you have to choose the **user and/or group** who/which should be allowed to access the Google Drive (Applicable).

External Storage

| Folder name | External storage | Configuration | |
|-------------------------------------|------------------|--|--|
| <input type="text" value="GDrive"/> | Google Drive | <input type="text" value="Client ID"/> | <input type="text" value="Client secret"/> |

15. Now press the `Grant Access` button and you will finally be redirected to a Google website.
16. Click on the `Accept` button to confirm that you accept the Google data usage and data security policy.



INDICES AND TABLES

- *genindex*