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Accessing your UvA Home on OneDrive with Linux using OneDrive Free Client (Fork)[1]
UvA ICTS

1 UvA file storage service gone to the cloud

As of 2021 UvA has transfered its central file storage facilities for employee home directories from the inhouse maintained SMB file servers to the third-party cloud service, OneDrive. OneDrive is a file hosting and synchronization service offered by Microsoft, similar to SurfDrive, Dropbox, and Google Drive. There is unfortunately no official OneDrive client for Linux, but it is still possible to keep your OneDrive files in sync (with real-time file monitoring) with a local folder on your Linux machine. This short instruction will show you how, by using a fork of OneDrive Free Client, a command line OneDrive client for Linux.[2]

2 OneDrive Free Client (Fork)

The original OneDrive Free Client was abandoned in the autumn of 2018, but the tool was forked a few months later under the same name by a programmer from Melbourne only known by his GitHub account name "abraunegg". The OneDrive Free Client (fork) is a complete tool to interact and sync OneDrive on Linux, featuring:

- State caching

- Real-Time file monitoring with Inotify

- File upload / download validation to ensure data integrity

- Resumable uploads

- Support OneDrive for Business (part of Office 365)

- Shared folders (OneDrive Personal)

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[1]The following is an adaption of the February 2020 article 'How To Keep OneDrive In Sync With A Folder On Linux Using OneDrive Free Client Fork' from the Linux Uprising blog.
[2]An alternative way of accessing the OneDrive cloud on Linux is with Rclone.

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- SharePoint / Office 365 Shared Libraries

- Desktop notifications via libnotify

- Dry-run capability to test configuration changes

- Prevent major OneDrive accidental data deletion after configuration change

Like the original project, the OneDrive Free Client (fork) doesn't have a graphical user interface so it must be used from the command line, though it does have desktop notifications that let you know about the sync status and any sync error that occurs. It's also important to note that while local changes are uploaded right away to the linked OneDrive account, remote changes are delayed until the next synchronization when using –monitor (this 'monitor' mode allows the OneDrive Free Client to continuously monitor your local file system for changes, and upload them when detected). E.g. when running this tool as a service, the OneDrive Free Client monitor interval is 45 seconds, so it may take up to 45 seconds for remote changes to be synchronized to your local drive.

3   Installing OneDrive Free Client (fork) on popular Linux distributions

To install OneDrive Free Client (fork) from the official repositories on Fedora, Redhat EL and CentOS issue:

```
$ sudo dnf install onedrive
```

Install OneDrive Free Client (fork) on Debian Sid or Bullseye / Ubuntu 20.10, 20.04 and 19.10 and Linux distributions based on these Ubuntu releases (like Pop!_OS, Linux Mint, etc.) / Raspbian Testing / Kali Linux:

```
$ sudo apt install onedrive
```

For instruction on how to install OneDrive Free Client (fork) on other Linux distributions please consult https://github.com/abraunegg/onedrive/blob/master/docs/INSTALL.md.

4   Configuring OneDrive Free Client (fork) for your UvA home directory

After installing the application you must authorize it to access your UvA account by acquiring an access token. This is accomplished by running the command in a terminal without any additional command switches.

## 4.1 Authorizing OneDrive Free Client (fork) with your UvAnetID

Open a terminal and run `onedrive`:

```
$ onedrive
Configuring Global Azure AD Endpoints
Authorize this app visiting:

https://login.microsoftonline.com/common/oauth2/v2.0/authorize?client_id=d50ca74 0-c83f-4d1b-b616-12c519384f0c&scope=Files.R
eadWrite%20Files.ReadWrite.all%20Site s.Read.All%20Sites.ReadWrite.All%20offline_access&response_type=code&redirect_ur i=htt
ps://login.microsoftonline.com/common/oauth2/nativeclient

Enter the response uri: _
```

The command gives you a URI and requests a response URI. Following the link with a web browser will bring you to the Microsoft sign-in page. Entering your UvA e-mail address takes you to the UvA sign-in page.
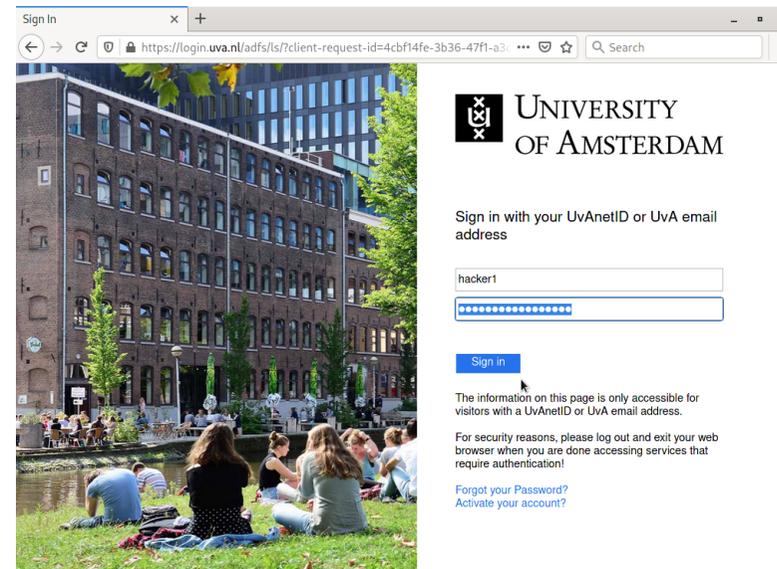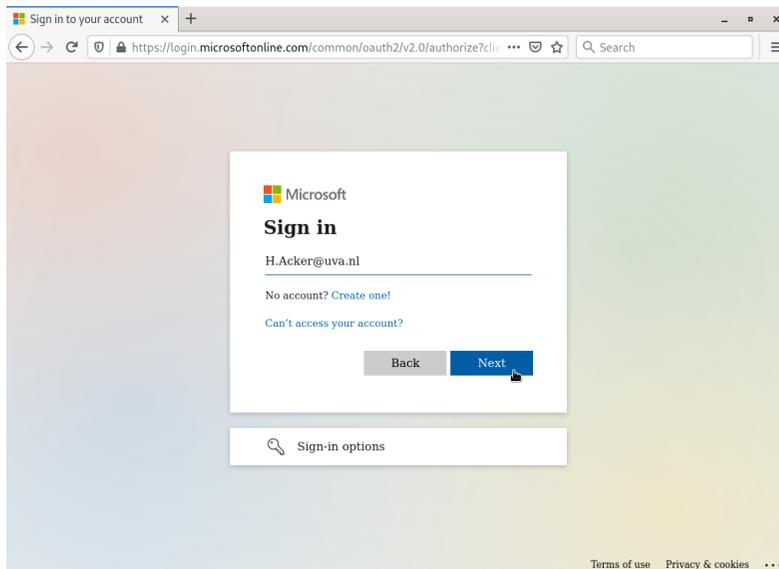
After logging in with your Uva E-mail address (or UvAnetID) a completely blank page should appear. That's ok, it's supposed to be like that. You now need to copy that blank page's URI from the browser's address bar and paste it into the terminal and press enter:

```
Enter the response uri: https://login.microsoftonline.com/common/oauth2/nativeclient?code=0.ASEAzcrxoIxhA0S5RXb7PWh05UCnD
NU_yBtNthYSxRk4TwwAhOM.AQABAAIAAAD--DLA3VO7QrddgJg7Wevr4YApvVgt_D6FcYPvsUBcGh66M8LiPLxlxhzebifrD7sdYGSO4rMB4gMDvUx2l4tEGKlS7
qXxchjCMkFnEvZTIaA9-VjkF535PcrmwMbcM1WNm2BY3O0nKJtaXCNZW2H4jTWUd0lwuZUaWxYFSuIIklLTvSQr4VyaFtWjU8cC_HmgOFm2M4cUwnAOMhGjhx3fB
MJ-p3i4zWDBepqP8tONK3LnS7SjGgKst69rPKLnNJI2JKyqhfvOz5APtkEZwfkOrSlVLksIyxxjASeKx4TC6_1M7gvovTiI1vbfcCUQGnEwNClt2DBJr6KSzPSx5
5z6O82w_gu-0oatyh_YyEyJpzybrfOfAVhhweCGvdhs7_Utoyc07pLqG7ks-Hpatr8_mEPeaWqgzGu_KuhpAvj73MGqLr7T_LBTg6TPOx7TQeMQG8b1V7ZyBKkBL
3hFD21w8LBpazgJfzhgLVk19mFT0lX5-2RQAC67cFty8Nm94ccOpOCrkkV2KXnxd3aO6oio3lBWv9cEcgY9j715WQdfhRKF5TmvegYlTTrIzjLvRdGEFXVH1Y3U2
BaU4iuFgZNNEBKk_tm-h0idBlK79Vn_h1QLcFcscBdo_MYFQx33Dh2DKustIS9a11-QTkcUEdQqFnpxxcqsRCRTZbisuEc78Ia4cCF1HFT5ZieDlQKX1dxg9etKq
yhDp3wV1mslYa3fb2HC8XQ_NEmYk-FeDzbLwbPwLG3O2XNzxmcAxRWcBhDoyj_CQP1WnJLEOrWRSl-N_a5eAsO3svM6FLrSyg2ucct3Yf53zO2k2cAwfiljH-cgA
A&session_state=cb08fda3-188d-4371-9e20-6b62ed90a848


Application has been successfully authorised, however no additional command switches were provided.


Please use --help for further assistance in regards to running this application.


$ _
```

If everything went as planned OneDrive Free Client (Fork) should now have acquired the access token for your UvA account.

4.2   First synchronization between OneDrive and your local filesystem

Once authorized, you can perform a sync of your cloud OneDrive files to your local disk. The onedrive command line tool will download all the OneDrive files to ˜/OneDrive (a OneDrive folder placed in your local home directory). You don't need to create this folder as the OneDrive client will create it for you. Let's perform a dry run (trial sync) that performs no actual changes, just to make sure this OneDrive Free Client for Linux works correctly. Issue:

```
$ onedrive --synchronize --verbose --dry-run
```

If everything looks good, let's start synchronizing your OneDrive files to the local ˜/OneDrive folder. To synchronize *all* your OneDrive cloud files to your local disk (i.e. to ˜/OneDrive), use:

```
$ onedrive --synchronize
```

This is just for the initial sync. To have OneDrive Free Client (Fork) run in the background and sync files when changes are detected, you should run it as a daemon.

4.3   Automatically running OneDrive Free Client (Fork) in the background

To have OneDrive Free Client (Fork) run as a daemon, so it automatically starts with your login session and it constantly watches for any OneDrive changes, synchronizing the changed files and folders, let's enable its *systemd service*. When used as a systemd service, this OneDrive command line client for Linux runs in monitor mode (`--monitor`), which allows it to continually monitor your local file system for changes to files.[3]
To enable and start the OneDrive systemd service (with notifications enabled) for your current (non-root) user, run:

```
$ systemctl --user enable onedrive
```

Check the OneDrive Free Client systemd service status with:

```
$ systemctl status --user onedrive
```

Only check the logs:

```
$ journalctl --user-unit onedrive -f
```

It is very important to note that you should not remove the `~/OneDrive` (or whatever path you're using for the OneDrive folder) folder while having the OneDrive Free Client fork systemd service running, as it will remove all your files from OneDrive (you will still have access to them on the OneDrive website, in the Recycle Bin).

5   Configuration options

In case you want to use a custom location for the OneDrive folder, you want to change the changed files monitoring interval, and much more, you can use the OneDrive Free Client configuration file.
On the Debian family, as well as the Redhat family, you'll find an example configuration at `/usr/share/doc/onedrive/config`. On other Linux distributions or if you can't find this config file, you can get it from the OneDrive Free Client GitHub project page.
To change the default OneDrive Free Client for Linux configuration for your user, copy that config file to `~/.config/onedrive`. E.g. on Debian, Ubuntu, Redhat, Fedora and other Linux distributions where this file is installed under `/usr/share/doc/onedrive/config`, copy it to `~/.config/onedrive` using:

```
$ cp /usr/share/doc/onedrive/config ~/.config/onedrive/
```

Now to change some OneDrive Free Client options, open the `~/.config/onedrive/config` file with a text editor. All the options in there are commented out (they have # in front of them); to change one of the defaults, uncomment the line, then set the value to what you want to use. The options in the config file

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[3]With many files though, this can run into issues (unable to add a new inotify watch) caused by the local environment. The solution for this is to increase the number of max inotify watchers. Please consult the documentation on how to do this.

should be self-explanatory in most cases. For help, see the onedrive man page (man onedrive). For more on using OneDrive Free Client on Linux, including how to use it with multiple OneDrive accounts, enabling proxy support for the OneDrive systemd service, and much more, check out the [OneDrive Free Client (Fork) Usage documentation](#).