

UvA-OneDrive onder Linux met Rclone

15 november 2024

In 2021 is de ICTS gestopt SMB fileservers te beheren voor de home-drives en gemeenschappelijke dataopslag van de medewerkers van de UvA en heeft de dienst uitbesteed aan Microsoft. De cloudservice van Microsoft heet "OneDrive". Om hier op een Linux-computer van gebruik te kunnen maken bestaan er thans tenminste twee methodes, een d.m.v. de "OneDrive Free Client (Fork)" en een met RClone die we hier behandelen. De ODFC werkt met een lokale kopie en wanneer mogelijk bestandssynchronisatie terwijl RClone het remote filesystem virtueel aankoppelt en bestandswijzigingen direct wegschrijft. Er dient bij RClone dus ononderbroken netwerkverbinding te zijn.

In deze instructie wordt de interactie in de commando-terminal weergeven in een fixed-font-lettertype. De invoer van de gebruiker is dikgedrukt. Het symbool '↵' aan het eind van een regel staat voor de enter-toets die door de gebruiker ingedrukt wordt. Het '\$'-symbool staat voor de UNIX-commando-prompt. Als voorbeeldgebruiker nemen we de fictieve medewerker Harrie Acker die als UvAnetID "hacker1" heeft. Lees overal waar u "hacker1" aantreft uw eigen UvAnetID.

Installeren RClone

Installeer vanuit de repository de binaries voor RClone. Onder Fedora opent u een terminal en geeft het volgende commando:

```
$ sudo dnf install rclone↵
```

Onder Debian, Ubuntu en Linux Mint zo:

```
$ sudo apt install rclone↵
```

Configureren RClone

Maak een configuratie voor uw persoonlijke UvA OneDrive-share. Dit doet u door het programma in een terminal aan te roepen met het argument "config". Vul de vragen in aan de hand van onderstaande voorbeeld. Het vetgedrukte is wat u invult maar vervang elke "**hacker1**" door uw eigen UvAnetID.

```
$ rclone config↵
2024/06/24 10:23:06 NOTICE: Config file
"/home/harrie/.config/rclone/rclone.conf" not found - using defaults
No remotes found, make a new one?
n) New remote
s) Set configuration password
q) Quit config
n/s/q> n↵
```

```
Enter name for new remote.
name> hacker1↵
```

Option Storage.

Type of storage to configure.

Choose a number from below, or type in your own value.

- 1 / 1Fichier
 - \ (fichier)
- 2 / Akamai NetStorage
 - \ (netstorage)
- 3 / Alias for an existing remote
 - \ (alias)
- 4 / Amazon Drive
 - \ (amazon cloud drive)
- 5 / Amazon S3 Compliant Storage Providers including AWS, Alibaba, ArvanCloud, Ceph, China Mobile, Cloudflare, GCS, DigitalOcean, Dreamhost, Huawei OBS, IBM COS, IDrive e2, IONOS Cloud, Leviia, Liara, Lyve Cloud, Minio, Netease, Petabox, RackCorp, Scaleway, SeaweedFS, StackPath, Storj, Synology, Tencent COS, Qiniu and Wasabi
 - \ (s3)
- 6 / Backblaze B2
 - \ (b2)
- 7 / Better checksums for other remotes
 - \ (hasher)
- 8 / Box
 - \ (box)
- 9 / Cache a remote
 - \ (cache)
- 10 / Citrix Sharefile
 - \ (sharefile)
- 11 / Combine several remotes into one
 - \ (combine)
- 12 / Compress a remote
 - \ (compress)
- 13 / Dropbox
 - \ (dropbox)
- 14 / Encrypt/Decrypt a remote
 - \ (crypt)
- 15 / Enterprise File Fabric
 - \ (filefabric)
- 16 / FTP
 - \ (ftp)
- 17 / Google Cloud Storage (this is not Google Drive)
 - \ (google cloud storage)
- 18 / Google Drive
 - \ (drive)
- 19 / Google Photos
 - \ (google photos)
- 20 / HTTP
 - \ (http)
- 21 / Hadoop distributed file system
 - \ (hdfs)
- 22 / HiDrive
 - \ (hidrive)
- 23 / In memory object storage system.
 - \ (memory)
- 24 / Internet Archive
 - \ (internetarchive)
- 25 / Jottacloud
 - \ (jottacloud)
- 26 / Koofr, Digi Storage and other Koofr-compatible storage providers
 - \ (koofr)
- 27 / Local Disk
 - \ (local)
- 28 / Mail.ru Cloud
 - \ (mailru)
- 29 / Mega

```
\ (mega)
30 / Microsoft Azure Blob Storage
   \ (azureblob)
31 / Microsoft OneDrive
   \ (onedrive)
32 / OpenDrive
   \ (opendrive)
33 / OpenStack Swift (Rackspace Cloud Files, Blomp Cloud Storage, Memset
Memstore, OVH)
   \ (swift)
34 / Oracle Cloud Infrastructure Object Storage
   \ (oracleobjectstorage)
35 / Pcloud
   \ (pcloud)
36 / PikPak
   \ (pikpak)
37 / Put.io
   \ (putio)
38 / QingCloud Object Storage
   \ (qingstor)
39 / Quatrix by Maytech
   \ (quatrix)
40 / SMB / CIFS
   \ (smb)
41 / SSH/SFTP
   \ (sftp)
42 / Sia Decentralized Cloud
   \ (sia)
43 / Sugarsync
   \ (sugarsync)
44 / Transparently chunk/split large files
   \ (chunker)
45 / Union merges the contents of several upstream fs
   \ (union)
46 / Uptobox
   \ (uptobox)
47 / WebDAV
   \ (webdav)
48 / Yandex Disk
   \ (yandex)
49 / Zoho
   \ (zoho)
50 / premiumize.me
   \ (premiumizeme)
51 / seafile
   \ (seafile)
Storage> onedrive
```

```
Option client_id.
OAuth Client Id.
Leave blank normally.
Enter a value. Press Enter to leave empty.
client_id> ↵
```

```
Option client_secret.
OAuth Client Secret.
Leave blank normally.
Enter a value. Press Enter to leave empty.
client_secret> ↵
```

Option region.
Choose national cloud region for OneDrive.
Choose a number from below, or type in your own string value.
Press Enter for the default (global).

```
1 / Microsoft Cloud Global
  \ (global)
2 / Microsoft Cloud for US Government
  \ (us)
3 / Microsoft Cloud Germany
  \ (de)
4 / Azure and Office 365 operated by Vnet Group in China
  \ (cn)
region> global
```

Edit advanced config?

```
y) Yes
n) No (default)
y/n> n
```

Use web browser to automatically authenticate rclone with remote?

* Say Y if the machine running rclone has a web browser you can use
* Say N if running rclone on a (remote) machine without web browser access
If not sure try Y. If Y failed, try N.

```
y) Yes (default)
```

```
n) No
```

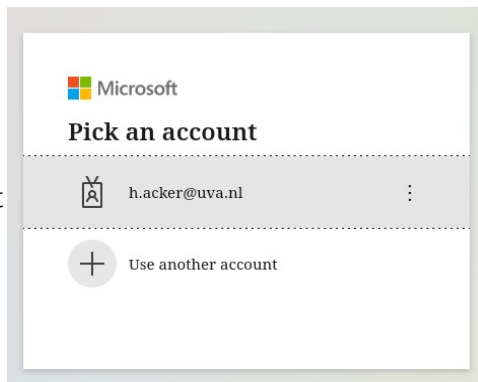
```
y/n> y
```

```
2024/06/24 10:28:49 NOTICE: If your browser doesn't open automatically go to the
following link: http://127.0.0.1:53682/auth?state=s8G_uPHgWtEnJ0pgpgZYPA
```

```
2024/06/24 10:28:49 NOTICE: Log in and authorize rclone for access
```

```
2024/06/24 10:28:49 NOTICE: Waiting for code...
```

Hier moet de browser openen met de gebruikelijke login-procedure voor uw UvA-account. Login en ga na verschijnen van de mededeling "Success!" verder met de interactieve stappen in de terminal.



```
2024/06/24 10:29:28 NOTICE: Got code
```

Option config_type.

Type of connection

Choose a number from below, or type in an existing string value.
Press Enter for the default (onedrive).

```
1 / OneDrive Personal or Business
  \ (onedrive)
2 / Root Sharepoint site
  \ (sharepoint)
  / Sharepoint site name or URL
3 | E.g. mysite or https://contoso.sharepoint.com/sites/mysite
  \ (url)
4 / Search for a Sharepoint site
  \ (search)
5 / Type in driveID (advanced)
  \ (driveid)
```

```
6 / Type in SiteID (advanced)
  \ (siteid)
  / Sharepoint server-relative path (advanced)
7 | E.g. /teams/hr
  \ (path)
config_type> onedrive
```

```
Option config_driveid.
Select drive you want to use
Choose a number from below, or type in your own string value.
Press Enter for the default (b!n-BuFCZ36keu4fP8HIdrSgVJivkzDAXHjnV6B5Fq1TfM
1cvtWM5wS4f-nXJ_Z3n1).
1 / OneDrive (business)
  \ (b!n-BuFCZ36keu4fP8HIdrSgVJivkzDAXHjnV6B5Fq1TfM1cvtWM5wS4f-nXJ_Z3n1)
config_driveid>
```

Drive OK?

```
Found drive "root" of type "business"
URL: https://amsuni-my.sharepoint.com/personal/h_acker_uva_nl/Documents
```

```
y) Yes (default)
n) No
y/n> y
```

Configuration complete.

Options:

- type: onedrive

- token:

```
{"access_token":"eyJ0eXAiOiIu...VaoBNOUCXWw","token_type":"Bearer","refresh_token":
": "0.ASEAzcrxoIhx...uXCy5VjQvaienhcCZwZE2hLxtGKCNBreJt8a0P8r6zeBx90yyWLET8", "e
xpiry": "2024-06-24T11:44:02.44829251+02:00"}
```

- drive_id: b!n-BgFCZ36keu4fP8AIdrSsVJiqfzPAxHjVn6BrSq1TfM1cvtWM5wS4f-nXJ_Z8n1

- drive_type: business

Keep this "hacker1" remote?

y) Yes this is OK (default)

e) Edit this remote

d) Delete this remote

y/e/d> y

Current remotes:

Name	Type
====	====
<i>hacker1</i>	onedrive

e) Edit existing remote

n) New remote

d) Delete remote

r) Rename remote

c) Copy remote

s) Set configuration password

q) Quit config

e/n/d/r/c/s/q> q

De zojuist aangemaakte configuratie is nu opgeslagen als ~/ .config/rc_lone/rc_lone.conf

Controleren nieuwe configuratie

Probeer de nieuw gemaakte configuratie uit door een uitdraai te maken van de bovenste directory van uw OneDrive-share:

```
$ rclone lsd hacker1:
-1 2021-05-06 16:47:59      11 Desktop
-1 2023-05-03 14:52:18     26 Microsoft Teams Chat Files
-1 2021-05-06 16:39:34      1 My Documents
-1 2021-05-06 16:47:47      6 My Pictures
-1 2021-05-06 16:47:52      3 My Videos
```

Koppelpunt voor OneDrive

Creëer de subdirectory in uw lokale home-directory waaraan uw OneDrive-share kan worden gekoppeld. Aangezien we in de toekomst naast de persoonlijke UvA-home mogelijk andere OneDrive-shares zullen aankoppelen kiezen we ervoor om een directory "OneDrive" te maken met daaronder het koppelpunt genaamd naar de UvAnetID.

```
$ mkdir ~/OneDrive
```

```
$ mkdir ~/OneDrive/hacker1
```

Nu kunnen we de share mounten aan het koppelpunt:

```
$ rclone mount --daemon --vfs-cache-mode full hacker1: OneDrive/hacker1
```

Controleer met het commando 'ls' dat dit gelukt is:

```
$ ls ~/OneDrive/hacker1
```

Het commando om te ontkoppelen ziet er erg anders uit:

```
$ fusermount -u ~/OneDrive/hacker1
```

Koppeling OneDrive automatiseren

Het is natuurlijk onpraktisch om bij elke nieuwe login-sessie opnieuw het lange commando te moeten geven om de OneDrive-share aan te koppelen. Dit kunnen we de computer automatisch laten doen door hiervoor een systemservice te creëren. Als voorbeeld geven we de service de naam "onedrive-hacker1". We gebruiken hier de befaamde vi-editor maar elke andere teksteditor volstaat.

```
$ vi .config/systemd/user/onedrive-hacker1.service
```

Kopieer onderstaande tekst naar deze file waarbij u alle instanties "**hacker1**" verandert in uw persoonlijke UvAnetID.

----knip----

```
[Unit]
Description=RClone mount of users remote hacker1 using filesystem permissions
Documentation=http://rclone.org/docs/
```

After=network-online.target

```
[Service]
Type=notify
#Set up environment
Environment=REMOTE_NAME="hacker1"
Environment=REMOTE_PATH="/"
Environment=MOUNT_DIR="%h/OneDrive/hacker1"
Environment=POST_MOUNT_SCRIPT=""
Environment=RCLONE_CONF="%h/.config/rclone/rclone.conf"
Environment=RCLONE_TEMP_DIR="/tmp/rclone/%u/hacker1"
Environment=RCLONE_RC_ON="false"

#Default arguments for rclone mount. Can be overridden in the environment file
Environment=RCLONE_MOUNT_ATTR_TIMEOUT="1s"
#TODO: figure out default for the following parameter
Environment=RCLONE_MOUNT_DAEMON_TIMEOUT="UNKNOWN_DEFAULT"
Environment=RCLONE_MOUNT_DIR_CACHE_TIME="60m"
Environment=RCLONE_MOUNT_DIR_PERMS="0777"
Environment=RCLONE_MOUNT_FILE_PERMS="0666"
Environment=RCLONE_MOUNT_GID="%G"
Environment=RCLONE_MOUNT_MAX_READ_AHEAD="128k"
Environment=RCLONE_MOUNT_POLL_INTERVAL="1m0s"
Environment=RCLONE_MOUNT_UID="%U"
Environment=RCLONE_MOUNT_UMASK="022"
Environment=RCLONE_MOUNT_VFS_CACHE_MAX_AGE="1h0m0s"
Environment=RCLONE_MOUNT_VFS_CACHE_MAX_SIZE="off"
Environment=RCLONE_MOUNT_VFS_CACHE_MODE="off"
Environment=RCLONE_MOUNT_VFS_CACHE_POLL_INTERVAL="1m0s"
Environment=RCLONE_MOUNT_VFS_READ_CHUNK_SIZE="128M"
Environment=RCLONE_MOUNT_VFS_READ_CHUNK_SIZE_LIMIT="off"
#TODO: figure out default for the following parameter
Environment=RCLONE_MOUNT_VOLNAME="UNKNOWN_DEFAULT"

#Overwrite default environment settings with settings from the file if present
EnvironmentFile=-%h/.config/rclone/hacker1.env

#Check that rclone is installed
ExecStartPre=/usr/bin/test -x /usr/bin/rclone

#Check the mount directory
ExecStartPre=/usr/bin/test -d "${MOUNT_DIR}"
ExecStartPre=/usr/bin/test -w "${MOUNT_DIR}"
#TODO: Add test for MOUNT_DIR being empty -> ExecStartPre=/usr/bin/test -z "$(ls
-A "${MOUNT_DIR}")"

#Check the rclone configuration file
ExecStartPre=/usr/bin/test -f "${RCLONE_CONF}"
ExecStartPre=/usr/bin/test -r "${RCLONE_CONF}"
#TODO: add test that the remote is configured for the rclone configuration

#Mount rclone fs
ExecStart=/usr/bin/rclone mount \
    --config="${RCLONE_CONF}" \
#See additional items for access control below for information about the
following 2 flags
#    --allow-other \
#    --default-permissions \
    --rc="${RCLONE_RC_ON}" \
    --cache-tmp-upload-path="${RCLONE_TEMP_DIR}/upload" \
    --cache-chunk-path="${RCLONE_TEMP_DIR}/chunks" \
    --cache-workers=8 \
    --cache-writes \
```

```

--cache-dir="${RCLONE_TEMP_DIR}/vfs" \
--cache-db-path="${RCLONE_TEMP_DIR}/db" \
--no-modtime \
--drive-use-trash \
--stats=0 \
--checkers=16 \
--bwlimit=40M \
--cache-info-age=60m \
--attr-timeout="${RCLONE_MOUNT_ATTR_TIMEOUT}" \
#TODO: Include this once a proper default value is determined
# --daemon-timeout="${RCLONE_MOUNT_DAEMON_TIMEOUT}" \
--dir-cache-time="${RCLONE_MOUNT_DIR_CACHE_TIME}" \
--dir-perms="${RCLONE_MOUNT_DIR_PERMS}" \
--file-perms="${RCLONE_MOUNT_FILE_PERMS}" \
--gid="${RCLONE_MOUNT_GID}" \
--max-read-ahead="${RCLONE_MOUNT_MAX_READ_AHEAD}" \
--poll-interval="${RCLONE_MOUNT_POLL_INTERVAL}" \
--uid="${RCLONE_MOUNT_UID}" \
--umask="${RCLONE_MOUNT_UMASK}" \
--vfs-cache-max-age="${RCLONE_MOUNT_VFS_CACHE_MAX_AGE}" \
--vfs-cache-max-size="${RCLONE_MOUNT_VFS_CACHE_MAX_SIZE}" \
--vfs-cache-mode="${RCLONE_MOUNT_VFS_CACHE_MODE}" \
--vfs-cache-poll-interval="$
{RCLONE_MOUNT_VFS_CACHE_POLL_INTERVAL}" \
--vfs-read-chunk-size="${RCLONE_MOUNT_VFS_READ_CHUNK_SIZE}" \
--vfs-read-chunk-size-limit="$
{RCLONE_MOUNT_VFS_READ_CHUNK_SIZE_LIMIT}" \
#TODO: Include this once a proper default value is determined
# --volname="${RCLONE_MOUNT_VOLNAME}"
"${REMOTE_NAME}:${REMOTE_PATH}" "${MOUNT_DIR}"

#Execute Post Mount Script if specified
ExecStartPost=/bin/sh -c "${POST_MOUNT_SCRIPT}"

#Unmount rclone fs
ExecStop=/bin/fusermount -u "${MOUNT_DIR}"

#Restart info
Restart=always
RestartSec=10

[Install]
WantedBy=default.target
# config-files onder $HOME/.config/rclone

----knip----

```

Doe eerst een reset van de service-manager:
\$ systemctl --user daemon-reload

Initialiseer en start de service:

```

$ systemctl --user enable onedrive-hacker1
$ systemctl --user start onedrive-hacker1

```

Vanaf nu wordt de OneDrive-share altijd automatisch aangekoppeld onder
~/OneDrive/hacker1