

Microsoft OneDrive

Paths are specified as `remote:path`

Paths may be as deep as required, e.g. `remote:directory/subdirectory`.

The initial setup for OneDrive involves getting a token from Microsoft which you need to do in your browser. `rclone config` walks you through it.

Here is an example of how to make a remote called `remote`. First run:

```
rclone config
```

This will guide you through an interactive setup process:

```

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> n
name> remote
Type of storage to configure.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
[snip]
XX / Microsoft OneDrive
  \ "onedrive"
[snip]
Storage> onedrive
Microsoft App Client Id
Leave blank normally.
Enter a string value. Press Enter for the default ("").
client_id>
Microsoft App Client Secret
Leave blank normally.
Enter a string value. Press Enter for the default ("").
client_secret>
Edit advanced config? (y/n)
y) Yes
n) No
y/n> n
Remote config
Use auto config?
  * Say Y if not sure
  * Say N if you are working on a remote or headless machine
y) Yes
n) No
y/n> y
If your browser doesn't open automatically go to the following link: http://127.0.0.1:53682/auth
Log in and authorize rclone for access
Waiting for code...
Got code
Choose a number from below, or type in an existing value
  1 / OneDrive Personal or Business
    \ "onedrive"
  2 / Sharepoint site
    \ "sharepoint"
  3 / Type in driveID
    \ "driveid"
  4 / Type in SiteID
    \ "siteid"
  5 / Search a Sharepoint site
    \ "search"
Your choice> 1
Found 1 drives, please select the one you want to use:
0: OneDrive (business) id=b!Eqwertyuiopasdfghjklzxcvbnm-7mnbvcxzlkjhgfdsapoiuytrewqk
Chose drive to use:> 0
Found drive 'root' of type 'business', URL: https://org-my.sharepoint.com/personal/you/Documents
Is that okay?
y) Yes
n) No
y/n> y
-----
[remote]
type = onedrive
token = {"access_token":"youraccesstoken","token_type":"Bearer","refresh_token":"yourrefreshtoken","expiry":"2018-08-26T22:39:
drive_id = b!Eqwertyuiopasdfghjklzxcvbnm-7mnbvcxzlkjhgfdsapoiuytrewqk
drive_type = business
-----
y) Yes this is OK

```

```
e) Edit this remote
d) Delete this remote
y/e/d> y
```

See the [remote setup docs](#) for how to set it up on a machine with no Internet browser available.

Note that rclone runs a webserver on your local machine to collect the token as returned from Microsoft. This only runs from the moment it opens your browser to the moment you get back the verification code. This is on <http://127.0.0.1:53682/> and this it may require you to unblock it temporarily if you are running a host firewall.

Once configured you can then use **rclone** like this,

List directories in top level of your OneDrive

```
rclone lsd remote:
```

List all the files in your OneDrive

```
rclone ls remote:
```

To copy a local directory to an OneDrive directory called backup

```
rclone copy /home/source remote:backup
```

Getting your own Client ID and Key

You can use your own Client ID if the default (**client_id** left blank) one doesn't work for you or you see lots of throttling. The default Client ID and Key is shared by all rclone users when performing requests.

If you are having problems with them (E.g., seeing a lot of throttling), you can get your own Client ID and Key by following the steps below:

1. Open https://portal.azure.com/#blade/Microsoft_AAD_RegisteredApps/ApplicationsListBlade and then click **New registration**.
2. Enter a name for your app, choose account type **Accounts in any organizational directory (Any Azure AD directory - Multitenant)** and **personal Microsoft accounts (e.g. Skype, Xbox)**, select **Web** in **Redirect URI**, then type (do not copy and paste) <http://localhost:53682/> and click **Register**. Copy and keep the **Application (client) ID** under the app name for later use.
3. Under **manage** select **Certificates & secrets**, click **New client secret**. Copy and keep that secret for later use.
4. Under **manage** select **API permissions**, click **Add a permission** and select **Microsoft Graph** then select **delegated permissions**.
5. Search and select the following permissions: **Files.Read**, **Files.ReadWrite**, **Files.Read.All**, **Files.ReadWrite.All**, **offline_access**, **User.Read**. Once selected click **Add permissions** at the bottom.

Now the application is complete. Run **rclone config** to create or edit a OneDrive remote. Supply the app ID and password as Client ID and Secret, respectively. rclone will walk you through the remaining steps.

Modification time and hashes

OneDrive allows modification times to be set on objects accurate to 1 second. These will be used to detect whether objects need syncing or not.

OneDrive personal supports SHA1 type hashes. OneDrive for business and Sharepoint Server support [QuickXorHash](#).

For all types of OneDrive you can use the **--checksum** flag.

Restricted filename characters

In addition to the [default restricted characters set](#) the following characters are also replaced:

Character	Value	Replacement
"	0x22	"
*	0x2A	*
:	0x3A	:
<	0x3C	<

Character	Value	Replacement
>	0x3E	>
?	0x3F	?
\	0x5C	\
	0x7C	

File names can also not end with the following characters. These only get replaced if they are the last character in the name:

Character	Value	Replacement
SP	0x20	
.	0x2E	.

File names can also not begin with the following characters. These only get replaced if they are the first character in the name:

Character	Value	Replacement
SP	0x20	
~	0x7E	~

Invalid UTF-8 bytes will also be [replaced](#), as they can't be used in JSON strings.

Deleting files

Any files you delete with rclone will end up in the trash. Microsoft doesn't provide an API to permanently delete files, nor to empty the trash, so you will have to do that with one of Microsoft's apps or via the OneDrive website.

Standard Options

Here are the standard options specific to onedrive (Microsoft OneDrive).

--onedrive-client-id

OAuth Client Id Leave blank normally.

- Config: client_id
- Env Var: RCLONE_ONEDRIVE_CLIENT_ID
- Type: string
- Default: ""

--onedrive-client-secret

OAuth Client Secret Leave blank normally.

- Config: client_secret
- Env Var: RCLONE_ONEDRIVE_CLIENT_SECRET
- Type: string
- Default: ""

--onedrive-region

Choose national cloud region for OneDrive.

- Config: region
- Env Var: RCLONE_ONEDRIVE_REGION
- Type: string
- Default: "global"
- Examples:
 - "global"
 - Microsoft Cloud Global
 - "us"
 - Microsoft Cloud for US Government
 - "de"
 - Microsoft Cloud Germany
 - "cn"
 - Azure and Office 365 operated by 21Vianet in China

Advanced Options

Here are the advanced options specific to onedrive (Microsoft OneDrive).

--onedrive-token

OAuth Access Token as a JSON blob.

- Config: token
- Env Var: RCLONE_ONEDRIVE_TOKEN
- Type: string
- Default: ""

--onedrive-auth-url

Auth server URL. Leave blank to use the provider defaults.

- Config: auth_url
- Env Var: RCLONE_ONEDRIVE_AUTH_URL
- Type: string
- Default: ""

--onedrive-token-url

Token server url. Leave blank to use the provider defaults.

- Config: token_url
- Env Var: RCLONE_ONEDRIVE_TOKEN_URL
- Type: string
- Default: ""

--onedrive-chunk-size

Chunk size to upload files with - must be multiple of 320k (327,680 bytes).

Above this size files will be chunked - must be multiple of 320k (327,680 bytes) and should not exceed 250M (262,144,000 bytes) else you may encounter "Microsoft.SharePoint.Client.InvalidClientQueryException: The request message is too big." Note that the chunks will be buffered into memory.

- Config: chunk_size
- Env Var: RCLONE_ONEDRIVE_CHUNK_SIZE
- Type: SizeSuffix
- Default: 10M

--onedrive-drive-id

The ID of the drive to use

- Config: drive_id
- Env Var: RCLONE_ONEDRIVE_DRIVE_ID
- Type: string
- Default: ""

--onedrive-drive-type

The type of the drive (personal | business | documentLibrary)

- Config: drive_type
- Env Var: RCLONE_ONEDRIVE_DRIVE_TYPE
- Type: string
- Default: ""

--onedrive-expose-onenote-files

Set to make OneNote files show up in directory listings.

By default rclone will hide OneNote files in directory listings because operations like "Open" and "Update" won't work on them. But this behaviour may also prevent you from deleting them. If you want to delete OneNote files or otherwise want them to show up in directory listing, set this option.

- Config: `expose_onenote_files`
- Env Var: `RCLONE_ONEDRIVE_EXPOSE_ONENOTE_FILES`
- Type: bool
- Default: false

--onedrive-server-side-across-configs

Allow server-side operations (e.g. copy) to work across different onedrive configs.

This will only work if you are copying between two OneDrive *Personal* drives AND the files to copy are already shared between them. In other cases, rclone will fall back to normal copy (which will be slightly slower).

- Config: `server_side_across_configs`
- Env Var: `RCLONE_ONEDRIVE_SERVER_SIDE_ACROSS_CONFIGS`
- Type: bool
- Default: false

--onedrive-no-versions

Remove all versions on modifying operations

Onedrive for business creates versions when rclone uploads new files overwriting an existing one and when it sets the modification time.

These versions take up space out of the quota.

This flag checks for versions after file upload and setting modification time and removes all but the last version.

NB Onedrive personal can't currently delete versions so don't use this flag there.

- Config: `no_versions`
- Env Var: `RCLONE_ONEDRIVE_NO_VERSIONS`
- Type: bool
- Default: false

--onedrive-link-scope

Set the scope of the links created by the link command.

- Config: `link_scope`
- Env Var: `RCLONE_ONEDRIVE_LINK_SCOPE`
- Type: string
- Default: "anonymous"
- Examples:
 - "anonymous"
 - Anyone with the link has access, without needing to sign in. This may include people outside of your organization. Anonymous link support may be disabled by an administrator.
 - "organization"
 - Anyone signed into your organization (tenant) can use the link to get access. Only available in OneDrive for Business and SharePoint.

--onedrive-link-type

Set the type of the links created by the link command.

- Config: `link_type`
- Env Var: `RCLONE_ONEDRIVE_LINK_TYPE`
- Type: string
- Default: "view"
- Examples:
 - "view"
 - Creates a read-only link to the item.
 - "edit"
 - Creates a read-write link to the item.
 - "embed"
 - Creates an embeddable link to the item.

--onedrive-link-password

Set the password for links created by the link command.

At the time of writing this only works with OneDrive personal paid accounts.

- Config: link_password
- Env Var: RCLONE_ONEDRIVE_LINK_PASSWORD
- Type: string
- Default: ""

--onedrive-encoding

This sets the encoding for the backend.

See: the [encoding section in the overview](#) for more info.

- Config: encoding
- Env Var: RCLONE_ONEDRIVE_ENCODING
- Type: MultiEncoder
- Default: Slash,LtGt,DoubleQuote,Colon,Question,Asterisk,Pipe,BackSlash,Del,Ctl,LeftSpace,LeftTilde,RightSpace,RightPeriod,InvalidUtf8,Dot

Limitations

If you don't use rclone for 90 days the refresh token will expire. This will result in authorization problems. This is easy to fix by running the `rclone config reconnect remote:` command to get a new token and refresh token.

Naming

Note that OneDrive is case insensitive so you can't have a file called "Hello.doc" and one called "hello.doc".

There are quite a few characters that can't be in OneDrive file names. These can't occur on Windows platforms, but on non-Windows platforms they are common. Rclone will map these names to and from an identical looking unicode equivalent. For example if a file has a `?` in it will be mapped to `?` instead.

File sizes

The largest allowed file size is 250GB for both OneDrive Personal and OneDrive for Business ([Updated 13 Jan 2021](#)).

Path length

The entire path, including the file name, must contain fewer than 400 characters for OneDrive, OneDrive for Business and SharePoint Online. If you are encrypting file and folder names with rclone, you may want to pay attention to this limitation because the encrypted names are typically longer than the original ones.

Number of files

OneDrive seems to be OK with at least 50,000 files in a folder, but at 100,000 rclone will get errors listing the directory like `couldn't list files: UnknownError:.` See [#2707](#) for more info.

An official document about the limitations for different types of OneDrive can be found [here](#).

Versions

Every change in a file OneDrive causes the service to create a new version of the the file. This counts against a users quota. For example changing the modification time of a file creates a second version, so the file apparently uses twice the space.

For example the `copy` command is affected by this as rclone copies the file and then afterwards sets the modification time to match the source file which uses another version.

You can use the `rclone cleanup` command (see below) to remove all old versions.

Or you can set the `no_versions` parameter to `true` and rclone will remove versions after operations which create new versions. This takes extra transactions so only enable it if you need it.

Note At the time of writing Onedrive Personal creates versions (but not for setting the modification time) but the API for removing them returns "API not found" so cleanup and `no_versions` should not be used on Onedrive Personal.

Disabling versioning

Starting October 2018, users will no longer be able to disable versioning by default. This is because Microsoft has brought an [update](#) to the mechanism. To change this new default setting, a PowerShell command is required to be run by a SharePoint admin. If you are an admin, you can run these commands in PowerShell to change that setting:

1. `Install-Module -Name Microsoft.Online.SharePoint.PowerShell` (in case you haven't installed this already)
2. `Import-Module Microsoft.Online.SharePoint.PowerShell -DisableNameChecking`
3. `Connect-SPOService -Url https://YOURSITE-admin.sharepoint.com -Credential YOU@YOURSITE.COM` (replacing YOURSITE, YOU, YOURSITE.COM with the actual values; this will prompt for your credentials)
4. `Set-SPOTenant -EnableMinimumVersionRequirement $False`
5. `Disconnect-SPOService` (to disconnect from the server)

Below are the steps for normal users to disable versioning. If you don't see the "No Versioning" option, make sure the above requirements are met.

User [Weropol](#) has found a method to disable versioning on OneDrive

1. Open the settings menu by clicking on the gear symbol at the top of the OneDrive Business page.
2. Click Site settings.
3. Once on the Site settings page, navigate to Site Administration > Site libraries and lists.
4. Click Customize "Documents".
5. Click General Settings > Versioning Settings.
6. Under Document Version History select the option No versioning. Note: This will disable the creation of new file versions, but will not remove any previous versions. Your documents are safe.
7. Apply the changes by clicking OK.
8. Use rclone to upload or modify files. (I also use the `--no-update-modtime` flag)
9. Restore the versioning settings after using rclone. (Optional)

Cleanup

OneDrive supports `rclone cleanup` which causes rclone to look through every file under the path supplied and delete all version but the current version. Because this involves traversing all the files, then querying each file for versions it can be quite slow. Rclone does `--checkers` tests in parallel. The command also supports `-i` which is a great way to see what it would do.

```
rclone cleanup -i remote:path/subdir # interactively remove all old version for path/subdir
rclone cleanup remote:path/subdir   # unconditionally remove all old version for path/subdir
```

NB Onedrive personal can't currently delete versions

Troubleshooting

Unexpected file size/hash differences on Sharepoint

It is a [known](#) issue that Sharepoint (not OneDrive or OneDrive for Business) silently modifies uploaded files, mainly Office files (.docx, .xlsx, etc.), causing file size and hash checks to fail. There are also other situations that will cause OneDrive to report inconsistent file sizes. To use rclone with such affected files on Sharepoint, you may disable these checks with the following command line arguments:

```
--ignore-checksum --ignore-size
```

Alternatively, if you have write access to the OneDrive files, it may be possible to fix this problem for certain files, by attempting the steps below. Open the web interface for [OneDrive](#) and find the affected files (which will be in the error messages/log for rclone). Simply click on each of these files, causing OneDrive to open them on the web. This will cause each file to be converted in place to a format that is functionally equivalent but which will no longer trigger the size discrepancy. Once all problematic files are converted you will no longer need the ignore options above.

Replacing/deleting existing files on Sharepoint gets "item not found"

It is a [known](#) issue that Sharepoint (not OneDrive or OneDrive for Business) may return "item not found" errors when users try to replace or delete uploaded files; this seems to mainly affect Office files (.docx, .xlsx, etc.). As a workaround, you may use the `--backup-dir <BACKUP_DIR>` command line argument so rclone moves the files to be replaced/deleted into a given backup directory (instead of directly replacing/deleting them). For example, to instruct rclone to move the files into the directory `rclone-backup-dir` on backend `mysharepoint`, you may use:


```
--backup-dir mysharepoint:rclone-backup-dir
```

access_denied (AADSTS65005)

```
Error: access_denied
Code: AADSTS65005
Description: Using application 'rclone' is currently not supported for your organization [YOUR_ORGANIZATION] because it is in
```

This means that rclone can't use the OneDrive for Business API with your account. You can't do much about it, maybe write an email to your admins.

However, there are other ways to interact with your OneDrive account. Have a look at the webdav backend: <https://rclone.org/webdav/#sharepoint>

invalid_grant (AADSTS50076)

```
Error: invalid_grant
Code: AADSTS50076
Description: Due to a configuration change made by your administrator, or because you moved to a new location, you must use mu
```

If you see the error above after enabling multi-factor authentication for your account, you can fix it by refreshing your OAuth refresh token. To do that, run `rclone config`, and choose to edit your OneDrive backend. Then, you don't need to actually make any changes until you reach this question: `Already have a token - refresh?`. For this question, answer `y` and go through the process to refresh your token, just like the first time the backend is configured. After this, rclone should work again for this backend.