GES DISC (?)

Atmospheric Composition, *Water & Energy Cycles* and *Climate Variability*

🐦 (https://twitter.com/NASA_GESDISC)   ▶ (https://www.youtube.com/user/NASAGESDISC)   📖 (information/news)   💬
(https://wiki.earthdata.nasa.gov/display/forums/GES+DISC+Info+Forum)

View HowTos

👓 How to Download Data Files from HTTPS Service with wget

Overview:

This data recipe shows an example for downloading data files from an HTTPS service at GES DISC with the GNU wget command. GNU wget is a free software for non-interactive downloading of files from the Web. It is a Unix-based command-line tool, but is also available for other operating system, such as Linux, Windows, Mac OS X, etc.

Example:

This data recipe shows how to create a script to download multilple data files.

In this example we use MERRA-2 Monthly data files for 1981.

Time to complete the following procedures: 15 minutes

Prerequisites:

wget version 1.18 and later

Procedure:

1. Install wget:

Skip this step if you already have wget installed.

Download wget: https://www.gnu.org/software/wget/ (https://www.gnu.org/software/wget/)

2. Registration:

As of August 1 2016, access GES DISC data requires all users to be registered with NASA Earthdata Login and then be authorized to GES DISC by following the instructions:

- Create an Earthdata account (https://wiki.earthdata.nasa.gov/display/EL/How+To+Register+With+Earthdata+Login)
- Link GES DISC with your account (https://disc.gsfc.nasa.gov/earthdata-login)

Verify by clicking and download this example data file URL (https://acdisc.gesdisc.eosdis.nasa.gov/data//Aqua_AIRS_Level3/AIRX3STD.006/2006/AIRS.2006.12.31.L3.RetStd001.v6.0.9.0.G13155192744.hdf)

3. Set up wget

To run wget with your user credentials:

- for Mac or Linux, click on : mac_linux_wget (https://disc.gsfc.nasa.gov/data-access/#mac_linux_wget)
- for Windows, click on: windows_wget (https://disc.gsfc.nasa.gov/data-access/#windows_wget)

4. Get the HTTPS URL:

For example, for MERRA-2 monthly product, "MERRA-2 tavgM_2d_slv_Nx: 2d,Monthly mean,Time-Averaged,Single-Level,Assimilation,Single-Level Diagnostics (M2TMNXSLV.5.12.4)", year 1981, the HTTPS URL is:

```
https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981 (https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTH
```

Preview the list of data files by opening the URL with any Web browser.

5. List data files (Optional step):

The following is similar to **"ftp ls"** function:

- **for Linux:**

```
wget -q -nH -nd "<URL>" -O - | grep <filename_pattern> | cut -f4 -d\"
```

```
wget -q -nH -nd "<URL>" -O - | grep <filename_pattern> | awk -F'\"' '{print $4}'
```

Where,

<URL>: URL of the directory containing data files of interest

<filename_pattern>: pattern of the filename. The pattern can be found by previewing the data files with a Web browser.

In this example, we use filename_pattern='MERRA2_100':

```
wget -q -nH -nd "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)" -O - | grep MERRA2_100 | cut -f4 -d\"
```

```
wget -q -nH -nd "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)" -O - | grep MERRA2_100 | awk -F'\"'
'{print $4}'
```

- **for Mac OS X**

(or Linux system which has the "curl" command available), list data files can be done via curl by substituting 'curl -s' for 'wget -q -nH -nd', and omitting '-O -'. For example,

```
curl -s "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)" | grep MERRA2_100 | cut -f4 -d\"
```

Since **curl** does not have the ability to do recursive download. **wget** or a download manager may work better for multi-file downloads.

- **for Windows**

```
wget -q -nH -nd "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)" -O - | grep MERRA2_100 | awk -F'\"'
'{print $4}'
```

6. Download one data file:

- **for Linux and Mac**

wget <auth> --content-disposition **<URL_file>**

- **for Windows**

wget <auth_windows> --user=<your username> --ask-password --content-disposition **<URL_file>**

where,

<auth> : authorization options for linux or mac, e.g.:

--load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies

<auth_windows>: authorization options for windows , e.g.

--load-cookies C:\.urs_cookies --save-cookies C:\.urs_cookies --auth-no-challenge=on --keep-session-cookies

<your username> : Earthdata login Username

<URL_file>: URL of a data file

Example for Linux and Mac

```
wget --load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies --content-
disposition https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/MERRA2_100.tavgM_2d_slv_Nx.198101.nc4
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)
```

Example for Windows

```
wget --load-cookies C:\.urs_cookies --save-cookies C:\.urs_cookies --auth-no-challenge=on --keep-session-cookies --user=<your
username> --ask-password --content-
disposition  https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/MERRA2_100.tavgM_2d_slv_Nx.198101.nc4
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)
```

7. Download multiple files with recursive function:

The following is similar to "**ftp mget**" function.

- **for Linux and Mac**

wget <auth> --content-disposition **-r -c -nH -nd -np -A <acclist> <URL>**

where,

<auth>: authorization options, e.g.:

--load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies

<your username> : Earthdata login Username

<acclist>: filename suffixes or patterns of the data files, e.g., nc4, nc, hdf5, xml

<URL>: URL of the directory containing data files of interest

The Recursive Accept/Reject Options enables specifying comma-separated lists of file name suffixes or patterns to accept or reject. Read more in the Additional Information section.

Examples for Linux or Mac:

If `.netrc` and `.urs_cookies` files are cretaed.

- To download all files (.nc4 for data and .nc4.xml for metadata) in the directory:

```
wget --load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies -r -c -nH -nd -np -A nc4,xml  --content-
disposition "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)"
```

- To download only data files in the directory:

```
wget --load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies -r -c -nH -nd -np -A nc4 --content-
disposition "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)"
```

- To download part of data files in the directory (from Oct 1981 to Dec 1981):

```
wget --load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies -r -c -nH -nd -np -A '*19811*nc4' --
content-disposition "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)"
```

or

```
wget --load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies -r -c -nH -nd -np -A '*19811*nc4' --
content-disposition "https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/
(https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2SMNXSLV.5.12.4/1981/)"
```

8. Download multiple files using a text files containing a list of URLs:

Users who already have a list of URLs saved to their workstation in a file can simply issue the following command line, using wget 1.18 (or later):

For example, save the following to a text file: myfile.dat

```
https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/MERRA2_100.tavgM_2d_slv_Nx.198101.nc4
https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/MERRA2_100.tavgM_2d_slv_Nx.198102.nc4
https://goldsmr4.gesdisc.eosdis.nasa.gov/data/MERRA2_MONTHLY/M2TMNXSLV.5.12.4/1981/MERRA2_100.tavgM_2d_slv_Nx.198103.nc4
```

Examples for Linux or Mac:

```
wget --content-disposition --load-cookies ~/.urs_cookies --save-cookies ~/.urs_cookies --keep-session-cookies --content-
disposition -i myfile.dat
```

Examples for Windows:

```
wget --load-cookies C:\.urs_cookies --save-cookies C:\.urs_cookies --auth-no-challenge=on --keep-session-cookies --user=<your
username> --ask-password --content-disposition -i myfile.dat
```

Additional Info:

The Recursive Accept/Reject Options:

'-A *acclist* --accept *acclist*'

'-R *rejlist* --reject *rejlist*'

This option enables specifying comma-separated lists of file name suffixes or patterns to accept or reject. Note that if any of the wildcard characters, '*', '?', '[' or ']', appear in an element of acclist or rejlist, it will be treated as a pattern, rather than a suffix. In this case, you have to enclose the pattern into quotes to prevent your shell from expanding it, like in '-A "*.mp3"' or '-A '*.mp3''.

Read more options from the software manual.

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ʹ)
ʒgde (mailto:gsfc-help-
ʹ)

ov/about/highlights/HP_Privacy.html)

Science Focus Areas

Atmospheric Composition
(information/documents?
title=Atmospheric%20Composition)
Water & Energy Cycles
(information/documents?
title=Water%20%26%20Energy%20Cycles)
Climate Variability (information/documents?
title=Climate%20Variability)

Tools (information/tools)

Giovanni (information/tools?title=Giovanni)
MERRA Subsetter (information/tools?
title=MERRA%20Subsetter)
Data Rods for Hydrology (information/tools?
title=Hydrology%20Data%20Rods)
DQViz (information/tools?
title=Data%20Quality%20Visualization)
AIRS NRT Viewer (information/tools?
title=AIRS%20NRT%20Viewer)
OGC Web Map Service (information/tools?
title=OGC%20Web%20Map%20Server%20(WMS))
OPeNDAP and GDS (information/tools?
title=OPeNDAP%20and%20GDS)

Resources

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(information/howto)
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(information/faqs)
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