

oddI (OpenDAP Downloader)

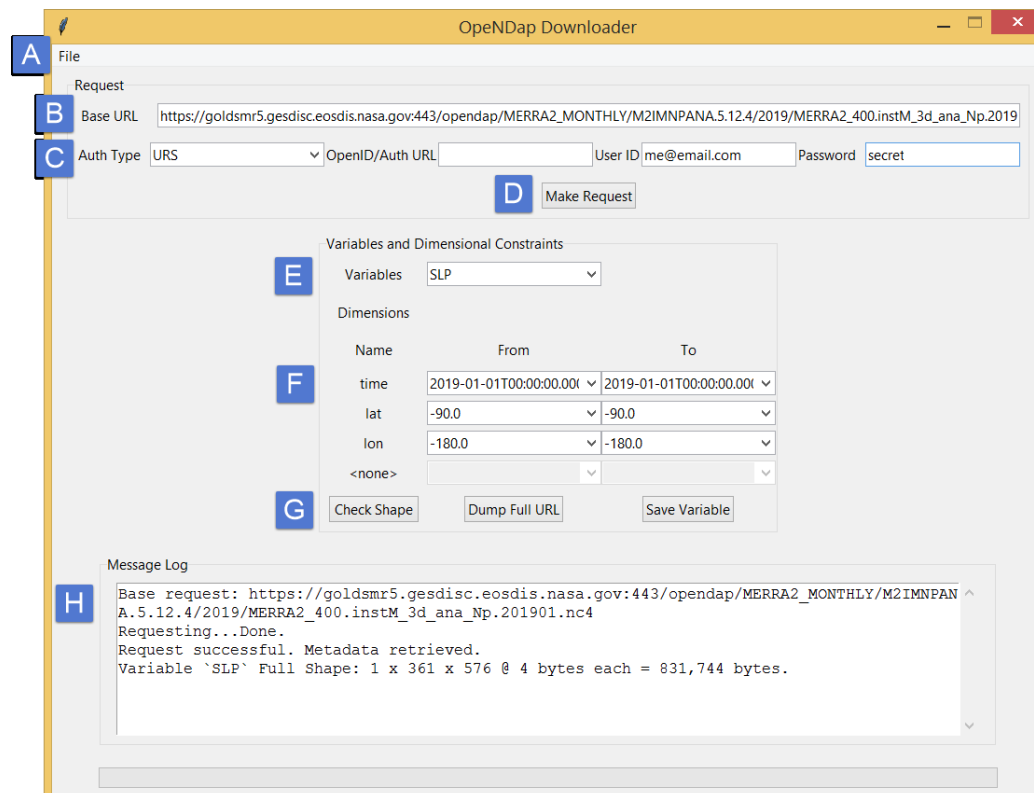
A GUI-based Python app for downloading and saving netCDF data via OpenDAP.

Basic Workflow

1. Enter a Base URL, authentication settings, and click the Request button.
2. Select a Variable.
3. Select Dimensional Constraints for the variable.
4. Click the Save button to save the requested variable data to a netCDF file.

There are a couple of ugly limitations! First, if a request fails (e.g. invalid authentication settings), a cryptic error message is output to the Message Log. Second, some servers fail to respond for a really, really long time if at all. There is no way through code to specify a good timeout, so the only alternative seems to be to exit and restart the App if the server isn't responding). Uggh.

Dialog



A File menu: Save authentication settings to file, Open settings file, Exit app.

B Base URL: The OpenDAP URL. It should include the URL to the “file” without query parameters. See **More about Requests and Authorization** below.

C Authentication Settings: Authentication type and various settings necessary to authenticate the request. See **More about Requests and Authorization** below.

D Request button: Performs an initial request returning variable and dimension metadata.

E Variable Selector: Select a variable of interest from a list of available variables for the request.

F Dimensional Constraints: Constraint the variable based on dimensional ranges.

G Action Buttons: Save the requested variable as a netCDF file, check the shape and theoretical size of the request. Also generate a complete OpeNDAP request URL for external usage.

H Message Log: Displays various messages about a request, variables, or dimensional constraints.

More about Requests and Authorization

Request URLs

Request URLs consist of a full URL to a resource where the URL typically ends with .NC or .NC4 but not always- sometimes they end in .GZ. Request URLs must not contain any parts of a *query string* or other appendage. For example, these are valid:

https://goldsmr5.gesdisc.eosdis.nasa.gov:443/opendap/MERRA2_MONTHLY/M2IMNPANA.5.12.4/2019/MERRA2_400.instM_3d_ana_Np.201901.nc4

<http://test.opendap.org/opendap/data/nc/sst.mnmean.nc.gz>

While these are not:

<http://test.opendap.org/opendap/data/nc/sst.mnmean.nc.gz.html>

[https://goldsmr5.gesdisc.eosdis.nasa.gov:443/opendap/MERRA2_MONTHLY/M2IMNPANA.5.12.4/2019/MERRA2_400.instM_3d_ana_Np.201901.nc4?QV\[0:0\]\[0:41\]\[0:360\]\[0:575\]](https://goldsmr5.gesdisc.eosdis.nasa.gov:443/opendap/MERRA2_MONTHLY/M2IMNPANA.5.12.4/2019/MERRA2_400.instM_3d_ana_Np.201901.nc4?QV[0:0][0:41][0:360][0:575])

Authentication Settings

Authentication settings can be complicated. Many online data sources require setting up an account and no two authentication types use the same fields. Below is a breakdown of the supported authentications types.

Auth Type: none

Example request URL: <http://test.opendap.org/opendap/data/nc/sst.mnmean.nc.gz>

Required fields: None

Notes: None

Auth Type: URS

Example request URL:

https://goldsmr5.gesdisc.eosdis.nasa.gov:443/opendap/MERRA2_MONTHLY/M2IMNPANA.5.12.4/2019/MERRA2_400.instM_3d_ana_Np.201901.nc4

Required fields: User ID, Password

Notes: Requires URS NASA EARTHDATA account for access. Must accept the appropriate EULA(s) in the `Applications` section of the account portal. Must also `Authorize App` in the same section. In this context, `App` does NOT mean **oddl**, it means a given data source. For example: `OB.DAAC Modis`.

Auth Type: ESGF

Example request URL: [http://esgf-](http://esgf-data.ucar.edu/thredds/dodsC/esg_dataroot/CMIP6/CMIP/NCAR/cesm2/historical/r10i1p1f1/Amon/tas/gn/v20190313/tas_Amon_CESM2_historical_r10i1p1f1_gn_200001-201412.nc)

[data.ucar.edu/thredds/dodsC/esg_dataroot/CMIP6/CMIP/NCAR/cesm2/historical/r10i1p1f1/Amon/tas/gn/v20190313/tas_Amon_CESM2_historical_r10i1p1f1_gn_200001-201412.nc](http://esgf-data.ucar.edu/thredds/dodsC/esg_dataroot/CMIP6/CMIP/NCAR/cesm2/historical/r10i1p1f1/Amon/tas/gn/v20190313/tas_Amon_CESM2_historical_r10i1p1f1_gn_200001-201412.nc)

Required fields: OpenID URL, Password, (if request URL contains `ceda.ac.uk`, User ID field is required)

Notes: Requires Earth System Grid Federation (ESGF) account for access.

Auth Type: CAS

Example request URL: No example yet

Required fields: Auth URL, User ID, Password

Notes: No example or additional information is available yet.