

Access ICDC's internal data from the outside

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1. Introduction

Some of ICDC's data sets are only available in the CEN/MPI network. But there is a possibility to access these data sets also from the outside by authentication via username and password. ICDC can set up this individual login on demand for CliSAP members. You should use an SSL connection by using https instead of http in our links, so that your password will be sent encrypted. Only if your client does not support SSL (e.g. for Matlab and OPeNDAP) you can switch back to the http-links, that are shown in this tutorial.

2. Data Tools

ICDC provides the following tools for our internal data sets, which can also be used from outside the CEN/MPI network via authentication. The Live Access Server (LAS) provides visualizations and partial data downloads, the THREDDS Data Server allows data downloads and OPeNDAP access. The following sections describe how to access the data sets by these tools.

2.1 Live Access Server (LAS)

We use the PMEL Live Access Server (Fig. 1) as an interactive visualization tool providing zoomable maps, time series, sections and partial data downloads. You can reach our internal LAS by clicking on a "View data via LAS" link of a data page on icdc.cen.uni-hamburg.de, or if you directly access it via the URL <http://icdc.cen.uni-hamburg.de/las-int/>. Inside the CEN/MPI network you can access it without authentication, but from outside you need username and password to login. You are logged in until you close your browser.

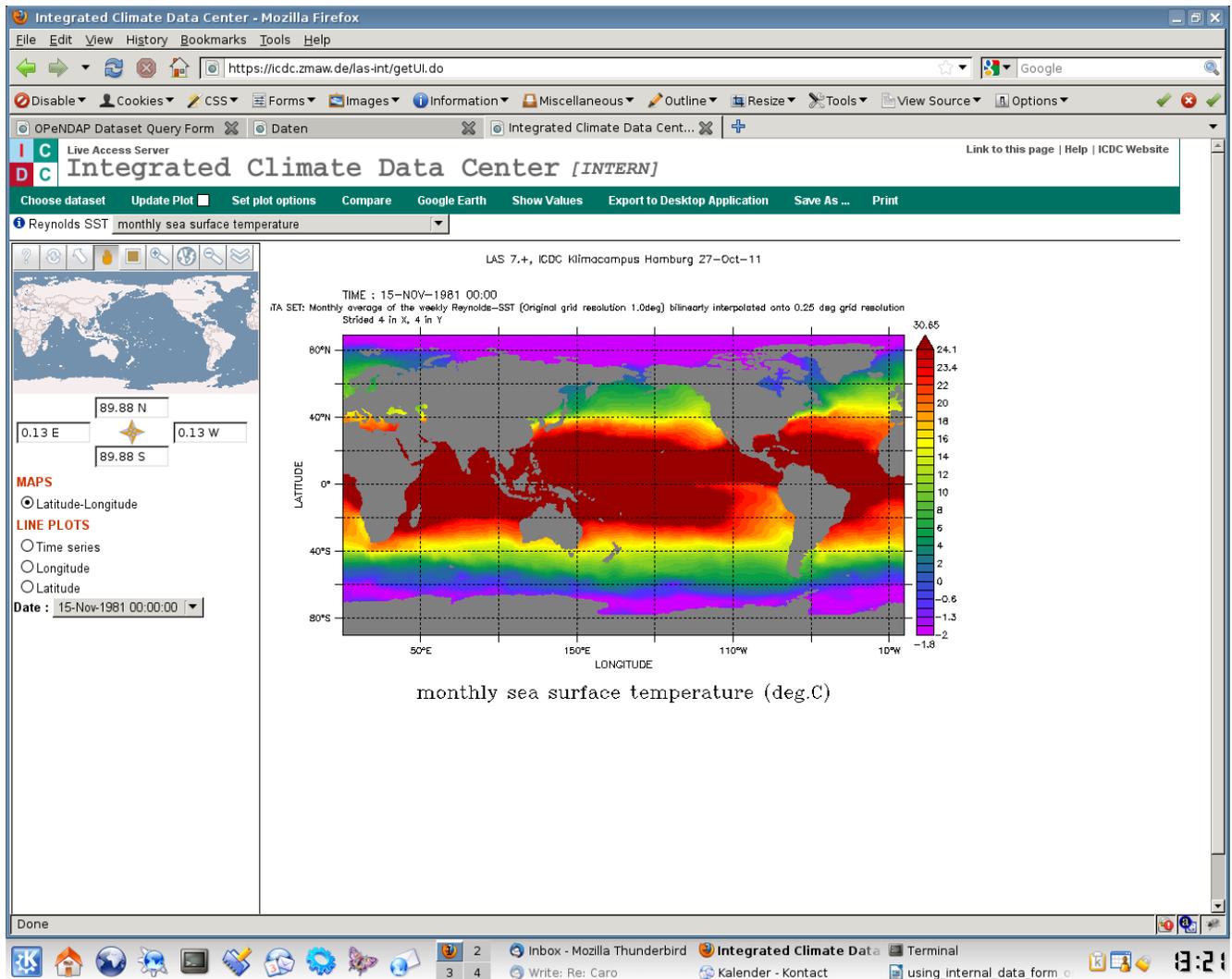


Fig. 1: Screenshot of our internal Live Access Server

2.2 THREDDS Server

2.2.1 Overview

If you click on a “Get data via HTTP / OPeNDAP” link in our data center or if you directly access THREDDS via the URL <http://icdc.cen.uni-hamburg.de/thredds-int/>, you will get to our internal THREDDS server. Inside the CEN/MPI network you can access it without authentication, but from outside you need username and password to login. You are logged in until you close your browser.

By directly accessing the URL <http://icdc.cen.uni-hamburg.de/thredds-int/>, you can find ALL our data sets: Just click on “Data” (Fig. 2). This shows the same contents as the /data/icdc/ folder, that is only accessible inside the CEN/MPI network.

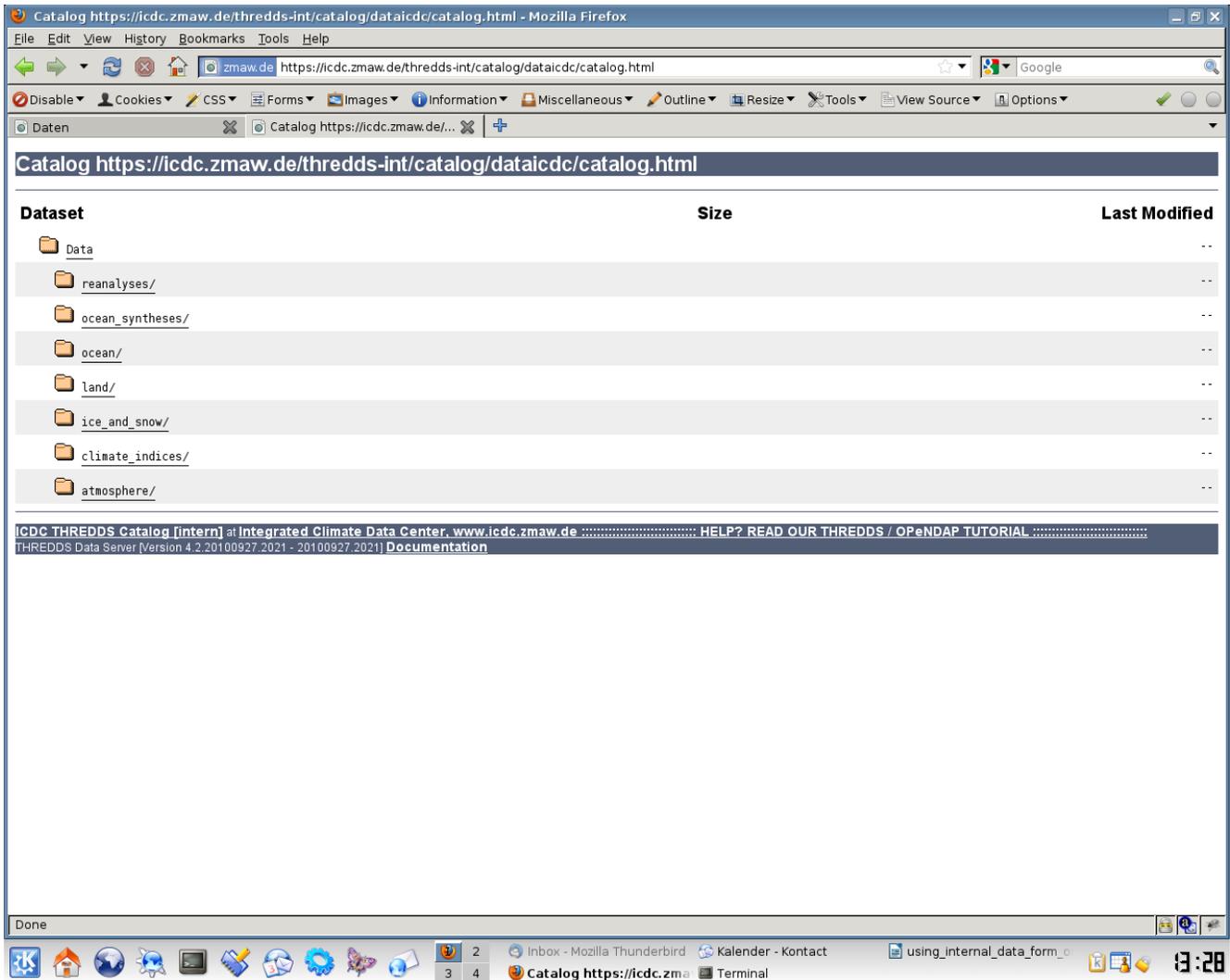


Fig. 2: Access to all our data sets via THREDDS

If you click on one data file, you will get to the screen shown in Fig. 3, where you can either download the file or use it via OPeNDAP. (In some cases there might be only the OPeNDAP link.) If you want to download the data, just click on the HTTPServer link. If you want to access it via OPeNDAP, click on the other one.

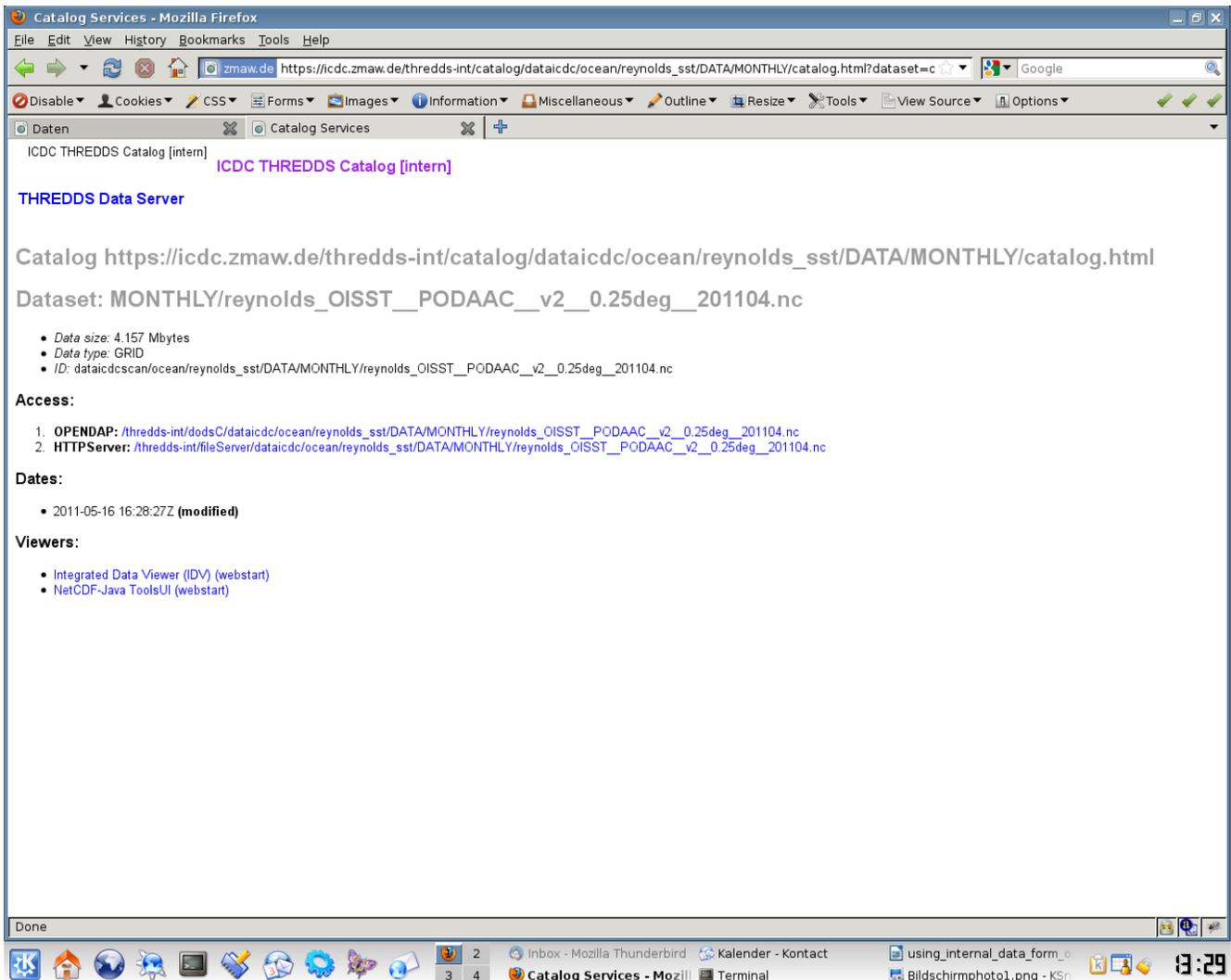


Fig. 3: Two possibilities to access data: download via HTTP or access via OPeNDAP

2.2.2 Download data via wget

If you are not only interested in one single file, then it might be useful to download several files at once by using `wget`. This tool should be installed on all Linux/Unix computers, and there is also a Windows version. You can get all netCDF-Files e.g. from the CRUTEM4 data set by using the following `wget` command (all in one line, you have to replace your login credentials):

```
wget -nc -r -l3 -A.nc -I /thredds-int/fileServer/,/thredds-int/catalog/
'http://USERNAME:PASSWORD@icdc.cen.uni-hamburg.de/thredds-
int/catalog/dataicdc/atmosphere/crutem/DATA/crutem4/catalog.html'
```

So, how do you get the right URL for the desired data set? Navigate to the root directory of our data sets by clicking on “Data” like described in 2.2.1. To find out the appropriate folder, you can look at the file system folder on the web page of the desired data set. For CRUTEM4 it is `/data/icdc/atmosphere/crutem`, so navigate to `atmosphere/crutem` in THREDDS. There you will find a

DATA folder, and inside a folder crutem4. Since you found the desired netCDF-Files, you can now copy the URL from your browser and use it in your wget command to download these files at once. You just have to insert your credentials like in the example above.

2.2.3 Using OPeNDAP

Via OPeNDAP you can work on a subset of the dataset file without the need to download it to your computer. If you click on the OPeNDAP link (e.g. in Fig. 3), you will get the OPeNDAP Dataset Access Form (Fig. 4). Simply copy the **Data URL** and use it with your favorite software like Ferret, GrADS, NCO, CDAT, Matlab.

In this case you have to insert your username and password into the Data URL:

```
http://USERNAME:PASSWORD@icdc.cen.uni-hamburg.de/thredds-int/dodsC/reynolds_sst_all
```

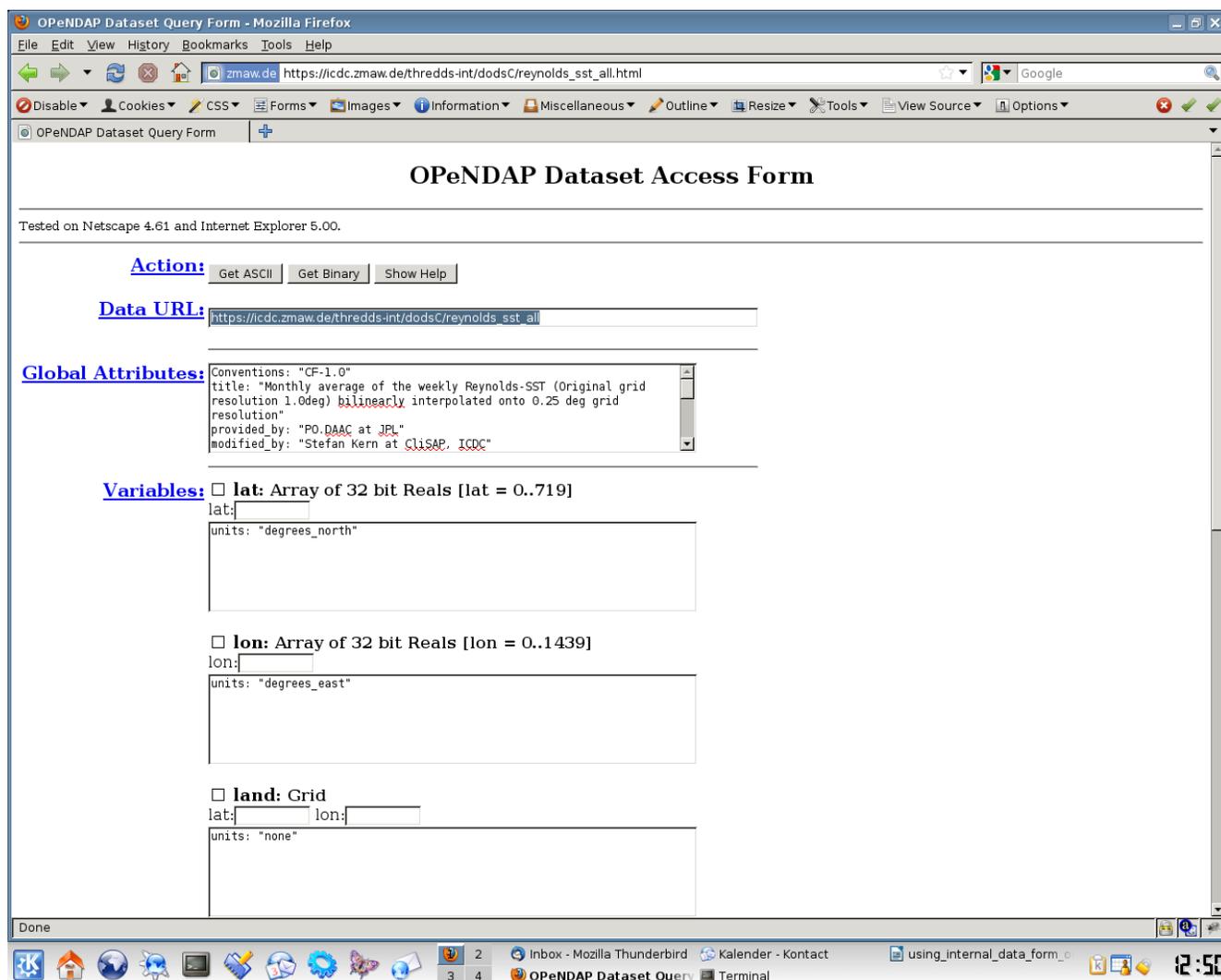


Fig. 4: Access data via OPeNDAP

E.g. in Ferret you can access it by the `use` command - like in the following example:

```
> ferret
yes? use "http://USERNAME:PASSWORD@icdc.cen.uni-hamburg.de/thredds-
int/dodsC/reynolds_sst_all"
yes? show data
```

3. Contact / Links

There are more tutorials about how to use our data center on:

<http://www.icdc.cen.uni-hamburg.de/tutorials.html>

You can find further details about THREDDS on:

<http://www.unidata.ucar.edu/projects/THREDDS/tech/TDS.html>

More information on wget:

<https://www.gnu.org/software/wget/>

If you want to know more about OPeNDAP, visit this site:

<http://www.opendap.org>

More Information on LAS:

<http://ferret.pmel.noaa.gov/LAS/home>

You can always contact the ICDC team, too:

<http://icdc.cen.uni-hamburg.de/beratung.html>

Your ICDC team,
Hamburg, 5.10.2016

Integrated Climate Data Center

University of Hamburg

<http://icdc.cen.uni-hamburg.de>