

How to install and use the NetCDF_DateAndTime Plugin

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1. Prepare your NetCDF data set

The data set has to be compliant with the [NetCDF Climate and Forecast \(CF\) Metadata Conventions](#).

- The **time dimension** has to be described with the help of the **standard_name** meta element.
- The time axis has to be **relative** and specified using the **units** meta tag. The reference date/time string appearing after the identifier **since** is required

```
D:\WORK\DATE_TIME_PYTHON_PLUGIN>ncdump -h ICECON_16TS_EXAMPLE.nc
netcdf ICECON_16TS_EXAMPLE {
dimensions:
    time = UNLIMITED ; // (16 currently)
    x = 484 ;
    y = 484 ;
variables:
    double time(time) ;
    time:standard_name = "time" ;
    time:units = "hours since 2012-07-01 00:00:00" ;
    time:calendar = "proleptic_gregorian" ;
    time:axis = "T" ;
    double lon(y, x) ;
    lon:standard_name = "longitude" ;
```

If the data set has an absolute time axis, a corresponding relative time axis can be created with [CDO](#):
`cdo -r copy infile outfile.nc`

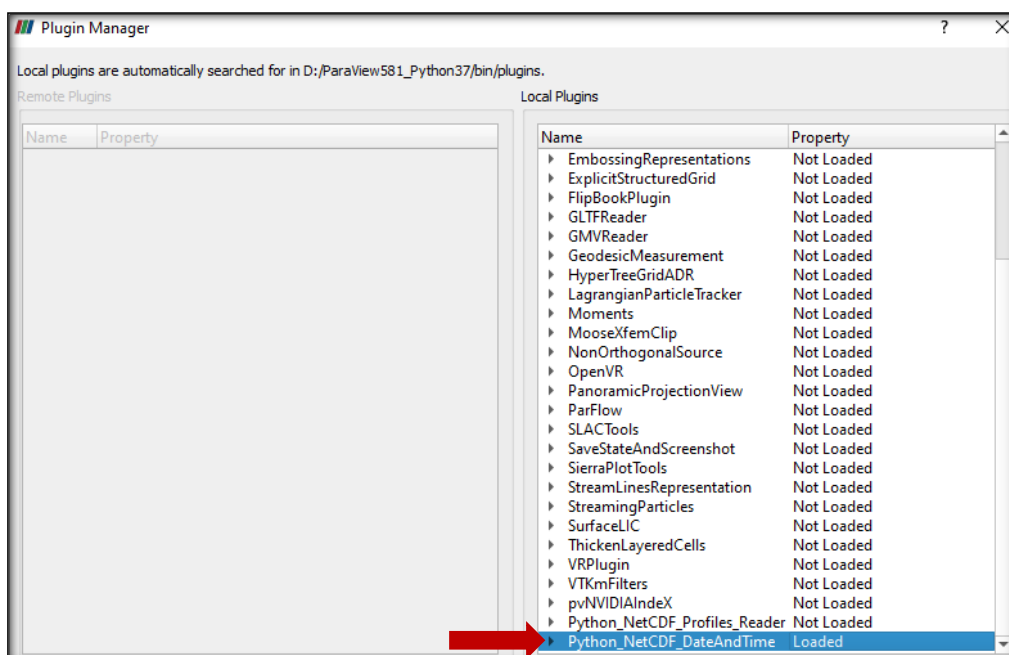
2. Installation

2.1. First install the **netcdf4-python** module, and either make sure its libraries are in the system path or add the libraries to the system path directly in the plugin Python script with `sys.path.append(...)`

2.2. Copy the **Python_NetCDF_Profiles_Reader.py** in a local folder

2.3. Start ParaView and load the plugin via the Plugin Manager: **Tools → Manage Plugins → Load New → select the Python_NetCDF_DateAndTime.pyfile** in the opening **Load Plugin** window.

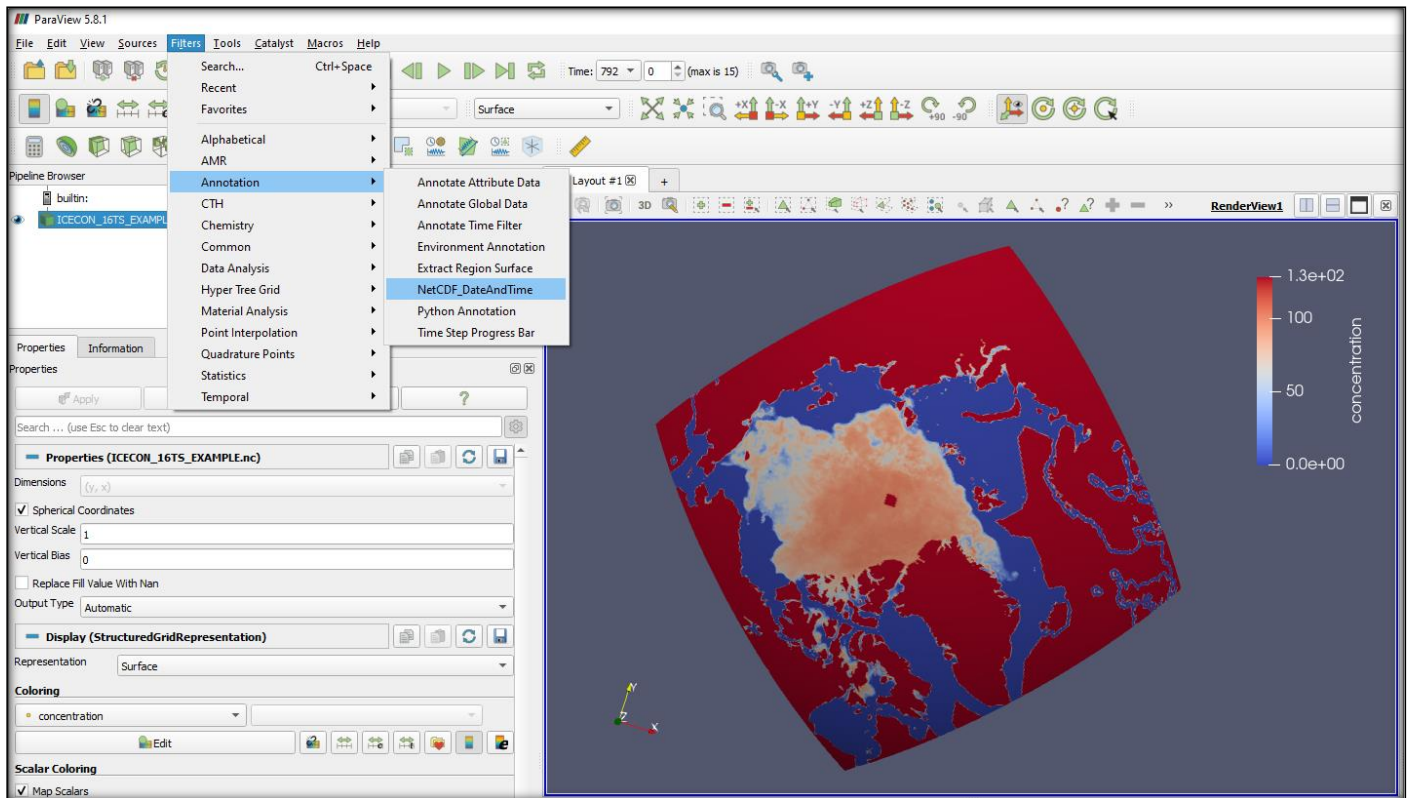
2.4 The plugin will now appear as **Loaded** in the Plugin Manager



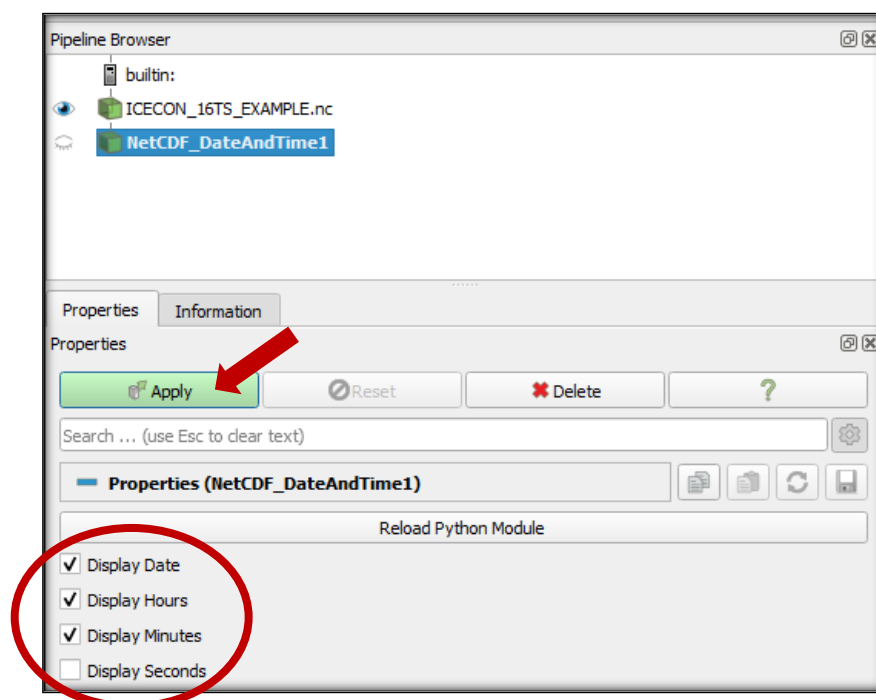
NOTE: Every time you will restart ParaView, the plugin will be visible in the Plugin Manager, but as **Not Loaded**. Therefore first you will need to select the plugin, then press the **Load Selected** button.

3. How to use the Plugin

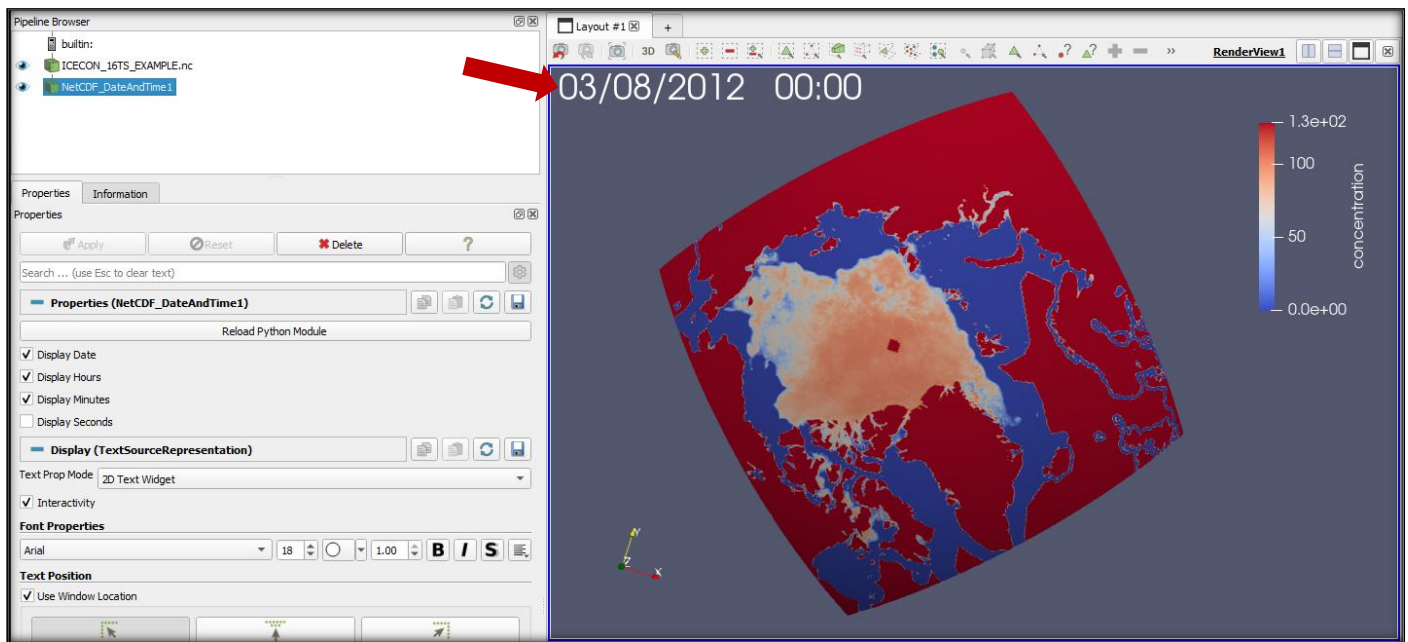
3.1 Select the NetCDF data set in the **Pipeline Browser**, then from the main menu select **Filters** → **Annotation** → **NetCDF_DateAndTime** → click **Apply**



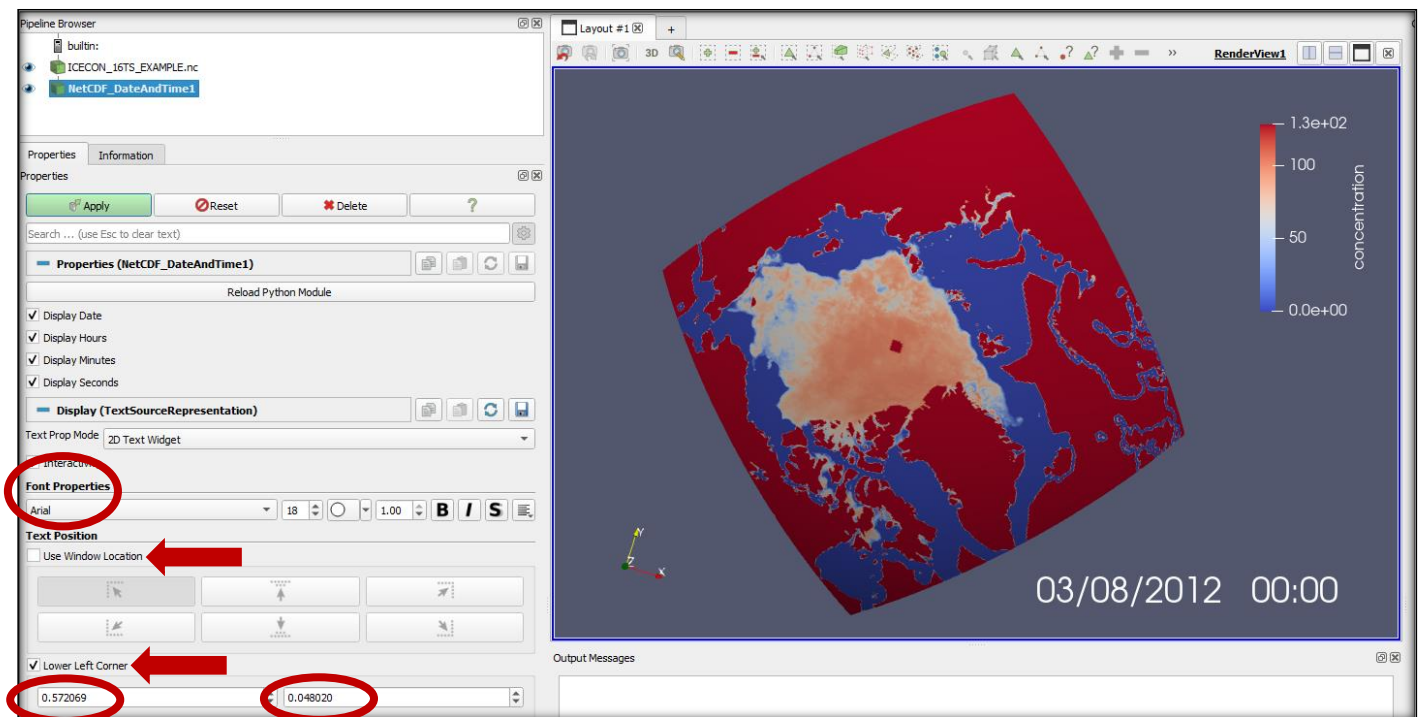
The **NetCDF_DateAndTime** will appear in the Pipeline Browser, while its options will be displayed in the **Properties** tab. Users are able to select with **checkboxes** + **click Apply** the following date/time components: date (displayed in DD/MM/YYYY format), hours, minutes, seconds. **Seconds cannot be displayed independently, but only if the minutes are selected previously as well.**



After clicking **Apply**, the date/time text string will be displayed in the 3D viewport.



3.2 We can use further ParaView options in order to move interactively the date/time text to a different location: uncheck the **Use Window Location** option and check the **Lower Left Corner** option. Afterwards you will be able to **drag the text with the mouse** to the desired location or **specify the exact window coordinates** relatively to the lower left corner. ParaView also offers the option to modify the **font properties**.



4. Troubleshooting and current issues of the Plugin

- Only when **first** loading the Plugin to ParaView (see step 2.3) Plugin might not appear in the Plugin list. In this case restart ParaView and repeat step 2.3.
- If you reopen a ParaView project where you saved the date/time, an error will be displayed in the ParaView console. **This error can be ignored.**

```
File "D:\...\Python_NetCDF_DateAndTime.py", line 87, in RequestDataObject
self.cdftime = utime(time_units.GetValue(0))
AttributeError: 'NoneType' object has no attribute 'GetValue'
```