

NCL on HPC

What is NCL?

The NCAR Command Language (NCL), a product of the Computational & Information Systems Laboratory at the National Center for Atmospheric Research (NCAR) and sponsored by the National Science Foundation, is a free interpreted language designed specifically for scientific data processing and visualization.

NCL has robust file input and output. It can read and write netCDF-3, netCDF-4 classic, netCDF-4, HDF4, binary, and ASCII data. It can read HDF-EOS2, HDF-EOS5, GRIB1, GRIB2, and OGR files (shapefiles, MapInfo, GMT, Tiger). It can be built as an OPeNDAP client.

NCL visualizations are world class and highly customizable. [\[Source\]](#)

Important: NCAR has made the decision to adopt Python as the scripting language platform of choice for future development of analysis and visualization tools.

Links:

[Official Website](#)

Versions Available:

The following versions are available on the cluster:

- NCL-NCAR v6.5.0

How to load NCL?

To load NCL, use the following commands:

```
#Load the NCL module
module load ncl-ncar
```

To verify if the module and dependencies are loaded correctly, use the following command.

```
#Show all the modules loaded
module list
```

This should list all the NCL dependencies that are loaded – only NCL since it is independent software.

How to use NCL?

To demonstrate the use of NCL language, download these two test files.

```
# Test files
wget https://w3.pppl.gov/ngdoc/ng/ug/ncl/gsun/examples/gsun01n.ncl
wget https://w3.pppl.gov/ngdoc/ng/ug/ncl/gsun/scripts/gsn_code.ncl
```

[Click here](#) to see the description of the content of files.

```
# Jump to a interactive compute node
srun -p main --qos main -n 1 -c 16 --mem 16G --pty bash
```

Use the NCL command line tool to run the downloaded NCL scripts,

```
# Run the NCL files
ncl < gsun07n.ncl
```

This command should plot graph on the user screen. If not, this is due to X11 display forwarding issue. Use the following command to log in cluster to fix the issue.

```
# X11 forwarded login
ssh -X bigal@uahpc.ua.edu
```

To know more about the language, visit the official website for more tutorials.

Where to find help?

If you are confused or need help at any point, please contact OIT at the following address.

<https://ua-app01.ua.edu/researchComputingPortal/public/oitHelp>

