

Pre-requisites

This course is targeted as an introductory beginner-level course but some experience with Linux and scientific programming would be helpful.

Description

This training aims to provide you with the skills and knowledge necessary to browse the data collections and services available at NCI. An overview of the data formats and standards used at NCI is presented. NCI's Virtual Desktop Infrastructure (VDI) is introduced, which is an interactive environment for data visualisation and analysis in the cloud.

The VDI substantially simplifies complicated analysis workflows that span multiple NCI systems by bringing together key data collections, analysis software, and compute systems in a familiar interface which users can work with as though on their own computer, without the need to wait on interactive queue jobs.

Learning outcomes

At the completion of this training you should have the skills and knowledge to:

- Search for datasets available at NCI
- Understand data formats and standards available at NCI
- Browse, access and extract data locally (i.e on filesystem) as well as remotely through NCI's data services
- Log into the VDI
- Load commonly used programs and modules available on the VDI
- Run Python scripts using common scientific libraries
- Launch and use iPython/Jupyter notebooks on the VDI
- Access and manipulate data hosted at NCI using iPython/Jupyter notebooks

Topics Covered

Key topics covered in this training include:

- **Review of national data collections**
- **Data formats and standards**
 - NetCDF / HDF5
 - GeoTIFF
- **Searching for datasets available at NCI**
- **Using NCI's data services to access data remotely**
 - OPeNDAP
 - NetCDF Subset Service (NCSS)
 - OGC Services: WMS, WCS
- **Using NCI's Virtual Desktop Infrastructure (VDI)**
 - Logging in via Strudel
 - Navigating the VDI
 - Available software
 - Loading software modules
 - Using Python within the VDI
 - Including customisation & iPython/Jupyter notebooks
 - To access data on NCI's filesystem and through data services