

Accessing Data on NCI

- You should have received NCI training account credentials to login in to raijin.
- If you already have access to raijin, you can use your own account.
- You can try out the VDI virtual desktop environment. Go to:
<https://opus.nci.org.au/display/Help/VDI+User+Guide>

Installing TurboVNC and Strudel

NCI Help

PAGE TREE

- Getting Started at NCI
- User Guides
 - Raijin User Guide
 - Tenjin Cloud User Guide
 - VDI User Guide**
 - Software Developer Guide
- Training
- Information for University of Wollongong
- NCI Help Archive Pages

Space tools

Release notes
If you already use the virtual desktop environment, also check the release notes for any recent updates: <https://vdi.nci.org.au/news>

1. Prerequisites

To access the virtual desktop environment, you will first need to install TurboVNC and the Strudel desktop launcher application from the MASSIVE/CVL project on your local computer. The instructions for installing these can be found for each operating system platform below. If you do not have the necessary access rights to install this software, please ask your system administrator to assist with this process.

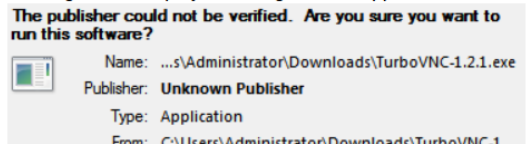
Upgrading
If you are upgrading a previously installed version of Strudel then we recommend that you uninstall both Strudel and TurboVNC first (and reboot if you are on Windows).

NCI account required
You will require an NCI login account to use a virtual desktop. If you don't already have one then you can register here: <https://my.nci.org.au>.

1.1. Windows

1.1.1. TurboVNC

- Download the TurboVNC installer (although 1.2.3 is now released initial testing has found that it crashes on Windows 7 so we'd recommend 1.2.2 instead for now): <http://downloads.sourceforge.net/project/turbovnc/1.2.2/TurboVNC-1.2.2.exe>
- Double click the executable to start the installation.
- A dialog will be displayed stating that the application is from an unverified publisher. Click the "Run" button to continue.

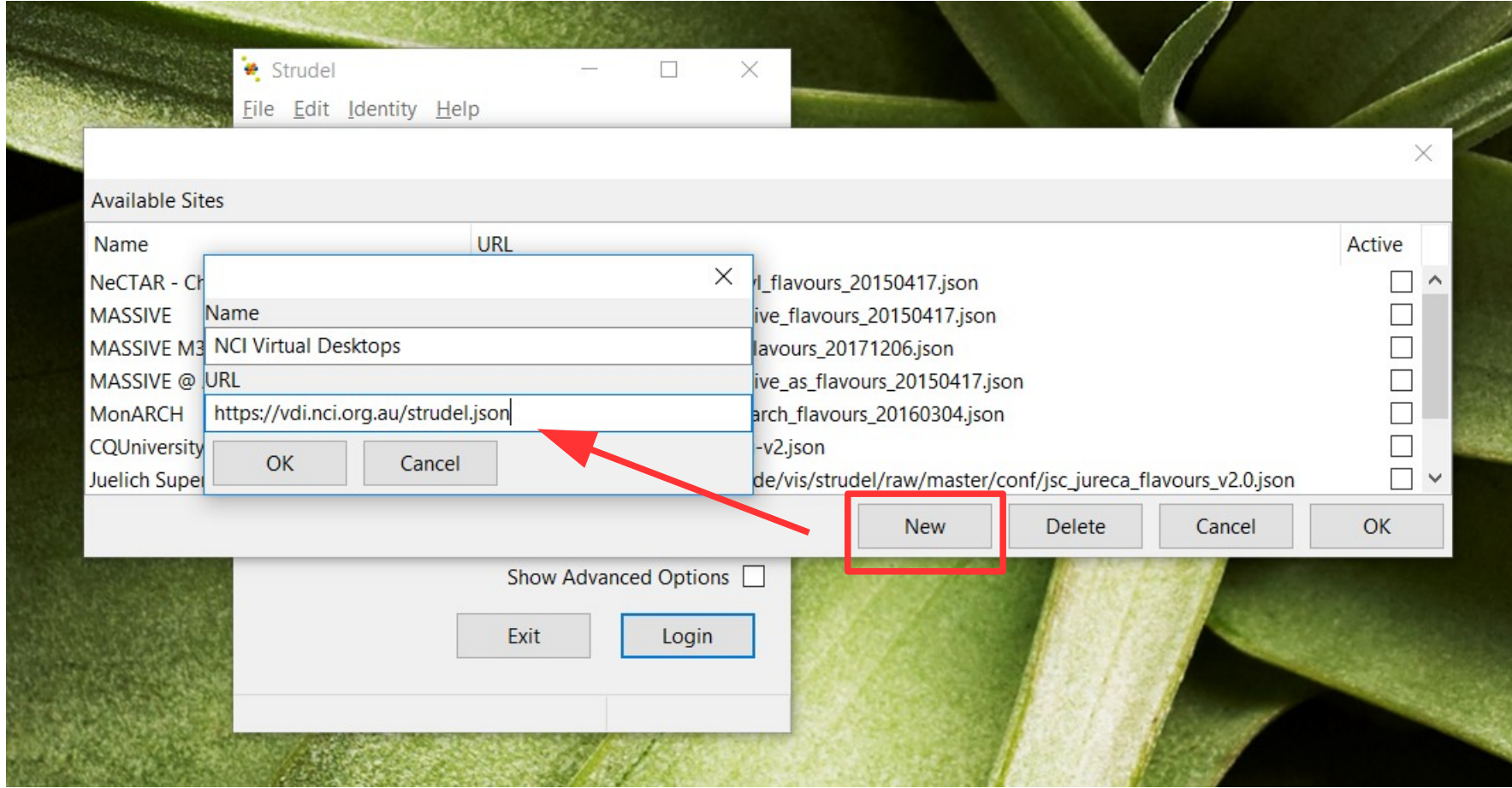


Install Procedure

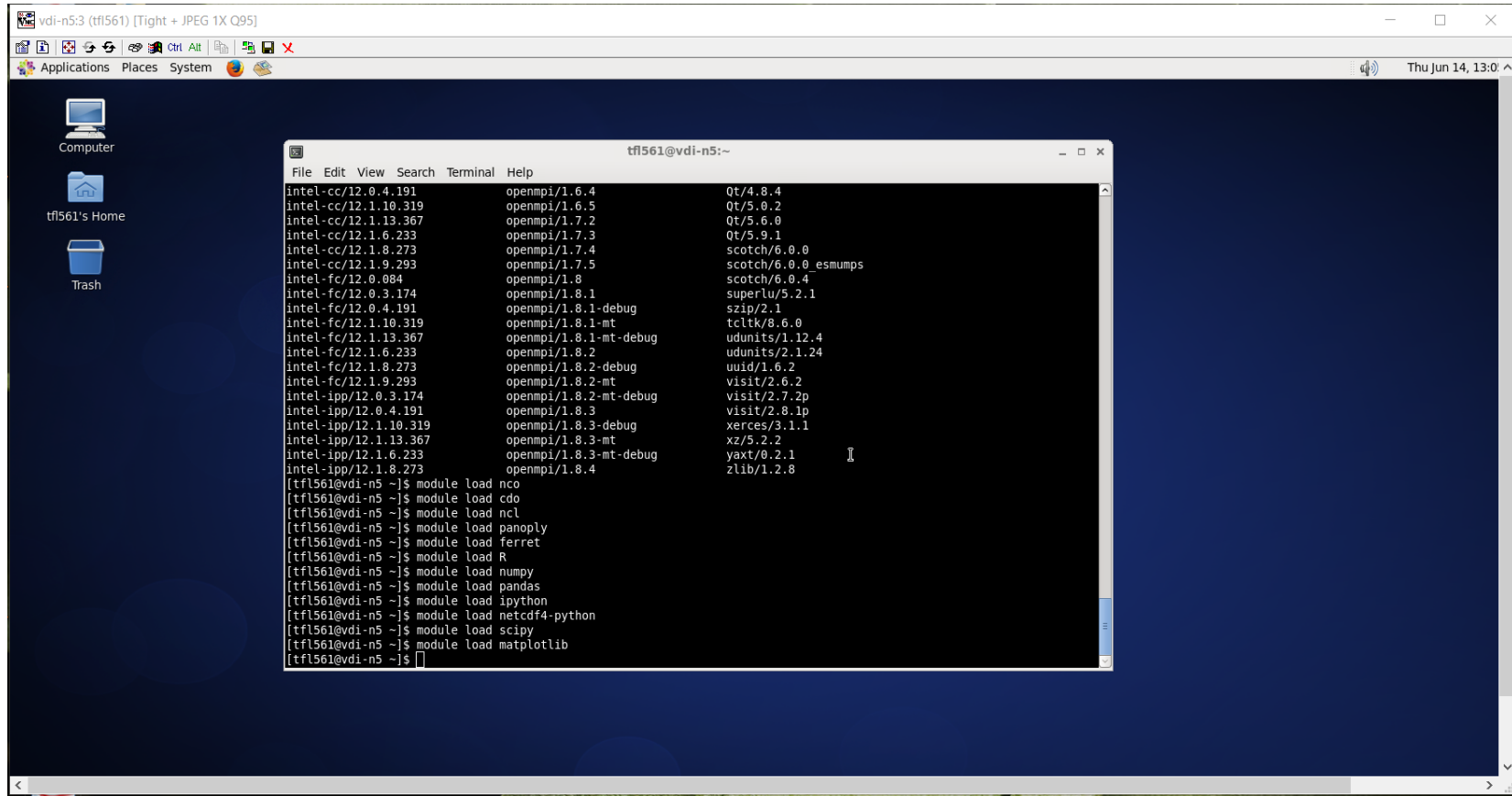
- 1) Install Oracle Java runtime (if mac)
- 2) Install Turbo VNC
- 3) Install Strudel
- 4) Configure Strudel
- 5) Log in

Configuring Strudel

File>Manage sites>New



Loading software



The screenshot shows a Linux desktop environment with a terminal window open. The terminal displays a list of installed modules and their versions, followed by a series of commands to load these modules.

```
tff561@vdi-n5:~$ module avail
intel-cc/12.0.4.191  openmpi/1.6.4      Qt/4.8.4
intel-cc/12.1.10.319  openmpi/1.6.5      Qt/5.0.2
intel-cc/12.1.13.367  openmpi/1.7.2      Qt/5.6.0
intel-cc/12.1.6.233   openmpi/1.7.3      Qt/5.9.1
intel-cc/12.1.8.273   openmpi/1.7.4      scotch/6.0.0
intel-cc/12.1.9.293   openmpi/1.7.5      scotch/6.0.0_esmumps
intel-fc/12.0.084     openmpi/1.8        scotch/6.0.4
intel-fc/12.0.3.174   openmpi/1.8.1      superlu/5.2.1
intel-fc/12.0.4.191   openmpi/1.8.1-debug  szip/2.1
intel-fc/12.1.10.319  openmpi/1.8.1-mt    tcltk/8.6.0
intel-fc/12.1.13.367  openmpi/1.8.1-mt-debug  udunits/1.12.4
intel-fc/12.1.6.233   openmpi/1.8.2      udunits/2.1.24
intel-fc/12.1.8.273   openmpi/1.8.2-debug  uuid/1.6.2
intel-fc/12.1.9.293   openmpi/1.8.2-mt    visit/2.6.2
intel-ipp/12.0.3.174  openmpi/1.8.2-mt-debug  visit/2.7.2p
intel-ipp/12.0.4.191  openmpi/1.8.3      visit/2.8.1p
intel-ipp/12.1.10.319  openmpi/1.8.3-debug  xerces/3.1.1
intel-ipp/12.1.13.367  openmpi/1.8.3-mt    xz/5.2.2
intel-ipp/12.1.6.233  openmpi/1.8.3-mt-debug  yaxt/0.2.1
intel-ipp/12.1.8.273  openmpi/1.8.4      zlib/1.2.8

[tff561@vdi-n5 ~]$ module load nco
[tff561@vdi-n5 ~]$ module load cdo
[tff561@vdi-n5 ~]$ module load ncl
[tff561@vdi-n5 ~]$ module load panoply
[tff561@vdi-n5 ~]$ module load ferret
[tff561@vdi-n5 ~]$ module load R
[tff561@vdi-n5 ~]$ module load numpy
[tff561@vdi-n5 ~]$ module load pandas
[tff561@vdi-n5 ~]$ module load ipython
[tff561@vdi-n5 ~]$ module load netcdf4-python
[tff561@vdi-n5 ~]$ module load scipy
[tff561@vdi-n5 ~]$ module load matplotlib
[tff561@vdi-n5 ~]$
```

module avail

module load xxx

WinterSchoolData

- Most of the data you need will be in this directory

```
[tfl561@vdi-n5 ~]$ module load matplotlib
[tfl561@vdi-n5 ~]$ cd /g/data/ua8/WinterSchoolData/
[tfl561@vdi-n5 WinterSchoolData]$ ls
20CR AWAP C20C Climdex ERA-Int ftp.cccma.ec.gc.ca GHCNDEX_2.5x2.5deg
[tfl561@vdi-n5 WinterSchoolData]$
```

- Please read the documentation provided. It's up to you to decide what to use.

ETTCCDI Data

Observations:

GHCNDEX

HADEX2

AWAP

Reanalyses:

ERA Interim

ERA40

NCEP/2

20CR

Models:

CMIP5 ~30 models and most experiments

C20C 1 model: CAM5-1 for All-Hist &

NonGHG-Hist

Heatwaves and Soil Moisture

- Look for Wrel1, spi, spei, heatwaves (tx/n90pct, ehf)
- ERA Int
- 20CR
- AWAP
- C20C

Climate Variability Indices

Climate indices

Southern Oscillation Index (SOI):

The Southern Oscillation Index (SOI) is a time series used to characterize the large scale sea level pressure (SLP) patterns in the tropical Pacific. Monthly mean SLP at Tahiti [T] and Darwin [D] are used. The SOI is linked to large scale tropical SST variability and as such is a measure of the "SO" part of the ENSO phenomenon. Positive SOI values correspond with El Niño events, characterized by warm SSTs in the eastern and central tropical Pacific.

<https://climatedataguide.ucar.edu/climate-data/southern-oscillation-and-tahitidarwin-slp-soi>

Niño n & ONI:

There are several indices used to monitor the tropical Pacific, and SST anomalies averaged across a given region. Usually the anomalies are relative to a base period of 30 years. The Niño 3.4 index and the Niño 3.4 ONI (ONI) are the most commonly used indices to define El Niño and La Niña. <https://climatedataguide.ucar.edu/climate-data/nino-sst-indices>

The screenshot shows the NCAR Climate Data Guide website. The main heading is "Climate Data" with a sub-heading "SOUTHERN OSCILLATION INDICES: SIGNAL, NOISE AND TAHITI/DARWIN SLP (SOI)". A red arrow points from the text on the left to the "Get Data (on CDG)" button, which is highlighted with a red box. Below the heading is a navigation menu with "Summary", "Expert Guidance", "Metadata", "Get Data (on CDG)", "Get Data (External)", and "References". To the right of the main content is a sidebar with the following information:

- SOUTHERN OSCILLATION INDICES: SIGNAL, NOISE AND TAHITI/DARWIN SLP (SOI)**
- YEARS OF RECORD**
1866/01 to 2016/01
- Main variables**
Atmosphere * Sea Level Pressure
- Type of data product**
Climate Indices > Circulation *1*
- Climate Indices** > ENSO > SOI
- Institution and PIs**
NCAR/ K. Trenberth

The main content area includes a line graph titled "Southern Oscillation Indices" showing standardized values from 1950 to 2010. The graph shows a clear oscillatory pattern with peaks around 1958, 1977, and 2002, and troughs around 1963, 1982, and 2009. Below the graph is a text description: "The Southern Oscillation Index (SOI) is a time series used to characterize the large scale sea level pressure (SLP) patterns in the tropical Pacific. Monthly mean SLP at Tahiti [T] and Darwin [D] are used. An optimal SOI can be constructed. It consists of [T-D] which is a measure of the large scale phenomena while [T+D] is a measure of small scale and/or transient phenomena that are not part of the large scale Southern Oscillation. The SOI..."

Some rules

- You can do everything interactively, no need to submit jobs.
- Be aware NCI is a shared resource. Try not to do anything too heavy. 60 people trying to access the same large file at the same time is probably not going to work.
- Try to subset the data as much as possible.