Australian Government

Geoscience Australia

Ginan Workshop – Set-Up Guide

1. Prerequisites

1.1 - Linux

The following workshop has been tested and written with Ubuntu in mind.

It has been tested on Ubuntu 22.04 and works for that version but should work for any Debian flavour. Please let us know if you are having problem with your Linux distribution.

Assuming you have a compatible Linux distribution, open up a terminal and continue to **Section 2: Setting up the Workspace**

1.2 - Windows using WSL (Windows Subsystem for Linux)

The workshop instructions have been written with WSL in mind.

Please ensure that your Windows machine has access to WSL 2. If you have Windows 11, or Windows 10 version 1903 or higher, with Build 18362 or higher then WSL 2 should be natively installed.

To check whether you have WSL 2 ready to go, or to install the required Linux distribution, follow the steps below:

1. Open Windows Powershell

2. To see if *WSL* is installed run the following command:

    ```
    wsl --list --verbose
    ```

3. If not installed (or Ubuntu not installed), go to (3a.) otherwise go to (4)

    a. Run the install command:

        ```
        wsl --install -d ubuntu
        ```

    b. Follow the on-screen instructions to set up your user

4. Open up WSL by running the command:

    ```
    wsl
    ```

    Once you have a Linux terminal running, it will look something like this:

    ```
    <user>@<computer_name>:</path/to/home/directory/> $
    ```

    We will be running all instructions from this terminal

You are now ready to continue to **Section 2: Setting up the Workspace**

WSL not functional?

In cases where there are difficulties in getting WSL working, we have a Docker option for running Ginan and this will be used on those cases. Please see the instructions below for installing Docker on Windows:

https://docs.docker.com/desktop/install/windows-install/

Once installed, open up a Ginan container from the Image tab and Run it to obtain a terminal to run the steps in **Section 2: Setting up Workspace and Virtual Environment**

Note: If needed, further instructions for running Docker will be provided during the Workshop itself

{*Post-Workshop Update*: Please refer to the Ginan Workshop – Docker Guide document included on the site}

1.3 - MacOS

The workshop instructions for MacOS will assume Docker has been installed, as we will use a Docker container to set up and run Ginan.

For instructions on how to set up Docker for MacOS, please refer to:

https://docs.docker.com/desktop/install/mac-install/

Once installed, open up a Ginan container from the Image tab and Run it to obtain a terminal to run the steps in **Section 2: Setting up Workspace and Virtual Environment**

Note: If needed, further instructions for running Docker will be provided during the Workshop itself

{*Post-Workshop Update*: Please refer to the Ginan Workshop – Docker Guide document included on the site}

2. Setting up Workspace and Virtual Environment

The following commands should all be run in a Linux terminal (either natively on Linux machines, in WSL 2 on Windows machines or via a Docker container for MacOS)

2.1 - Create a directory from which you will carry out analysis with Ginan

```
mkdir ginanworkshop
cd ginanworkshop
```

2.2 – Install wget and create virtual Python environment

```
sudo apt update
sudo apt install wget
sudo apt install libfuse2
sudo apt upgrade python3
sudo apt install python3-venv
```

2.2.1 - Create a new virtual Python environment

```
python3 -m venv ginanenv
```

2.2.2 - Activate virtual environment

```
source ginanenv/bin/activate
```

2.2.3 – Install necessary python packages {**Update**: `pip install gnssanalysis` will suffice after 1 July 2024}

```
pip install --upgrade pip
pip install click
pip install numpy
pip install requests
pip install hatanaka
```

2.3 - Download input reference and data files necessary for this workshop:

2.3.1 - Download the Ginan AppImage (which we will use to process our data):

```
wget https://github.com/GeoscienceAustralia/ginan/raw/develop-weekly-appimage/Ginan-x86_64.AppImage
```

2.3.2 - Make the file executable:

```
chmod 777 Ginan-x86_64.AppImage
```

2.3.3 - Download the configuration YAML file (tell Ginan how to run):

```
wget
https://raw.githubusercontent.com/GeoscienceAustralia/ginan/main/exampleConfigs/ppp_example.yaml
```

2.3.4 - Download the auto_download scripts (used to download necessary input files):

```
wget
https://raw.githubusercontent.com/GeoscienceAustralia/ginan/main/scripts/auto_download_PPP.py
wget https://raw.githubusercontent.com/GeoscienceAustralia/ginan/main/scripts/gn_functions.py
```

{**Update**: `gn_functions.py` script will be removed by 1 July 2024 – download only `auto_download_PPP.py`}

2.4 - Test that the auto-download script runs:

```
python3 auto_download_PPP.py --help
```

2.5 - Test that Ginan runs:

```
./Ginan-x86_64.AppImage –help
```