

# Introducing ARDC's Virtual Desktop and Jupyter Notebook services

October 2023

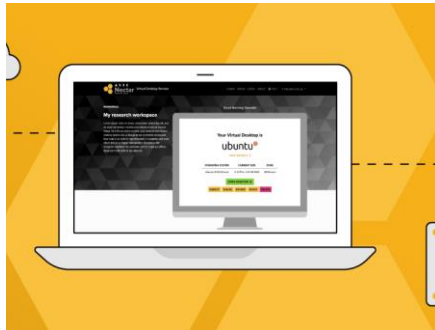
PRESENTED BY

## Andy Botting

*Technical Lead, Nectar Core Services  
Australian Research Data Commons (ARDC)*

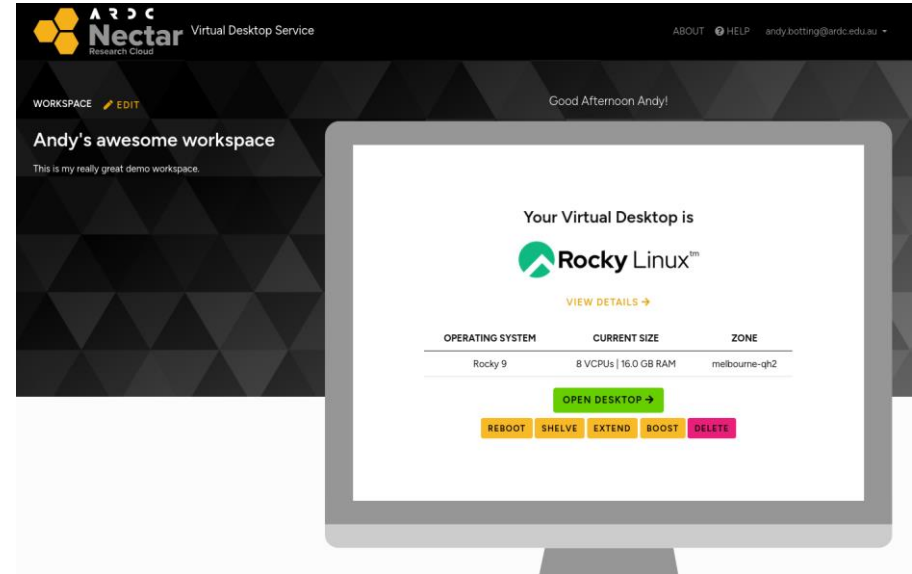
# Agenda

- Virtual Desktop Service
- Jupyter Notebook Service
- BinderHub Service



# Virtual Desktop service

- Simple as possible
- Desktops accessible via web browser
- Multi-AZ support (3 zones so far)
- Private networking for security
- Root (sudo) access
- Sound support
- Drag-and-drop file transfer
- Time limited with an expiry process



Up to 14 days

Extend it as many times as you like!

# Getting access



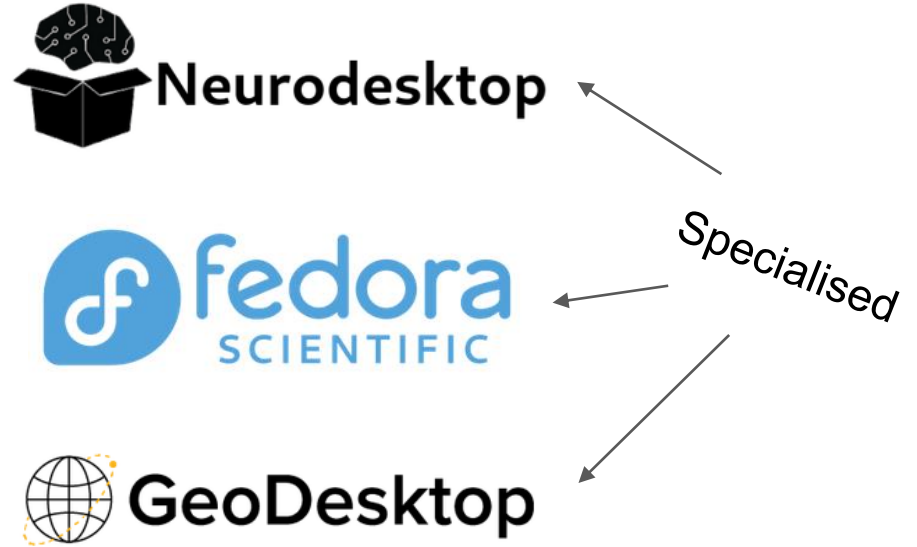
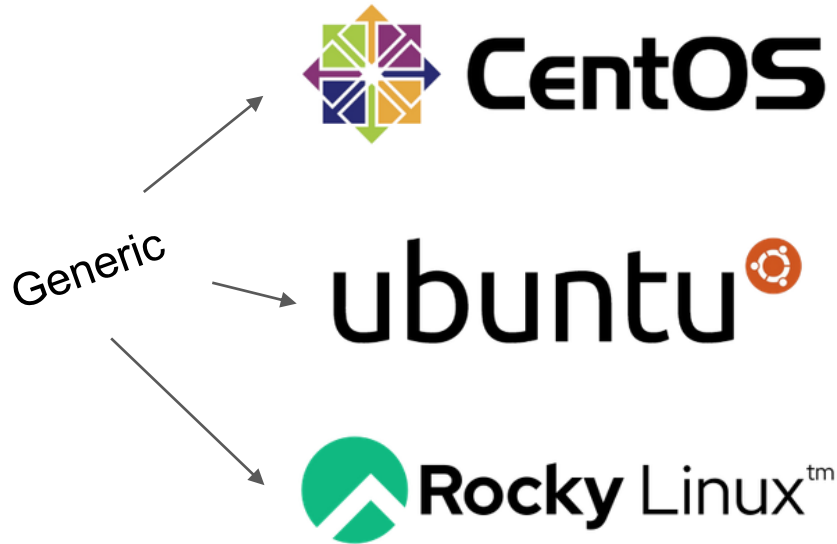
The screenshot shows the landing page for the ARDC Nectar Virtual Desktop Service. At the top left is the ARDC Nectar Research Cloud logo. To the right of the logo is the text 'Virtual Desktop Service'. Further right are the words 'ABOUT' and a 'SIGN IN' button. The main heading reads 'Welcome to the ARDC Nectar Research Cloud Virtual Desktop Service'. Below this is a paragraph: 'The Virtual Desktop Service is a service of the Australian Research Data Commons (ARDC) and utilises the ARDC Nectar Research Cloud.' A second paragraph states: 'The Australian Research Data Commons (ARDC) is enabled by the National Collaborative Research Infrastructure Strategy Program (NCRIS)'. There are two buttons: a yellow 'SIGN IN' button with a right-pointing arrow and a grey 'LEARN MORE' button. The bottom of the page features a decorative illustration with icons for a cloud, folder, laptop, server rack, search magnifying glass, star, desktop monitor, globe with location pin, and a pie chart.

Sign in with your institutional credentials via the Australian Access Federation (AAF).

Create a workspace and provide some basic details about your research.

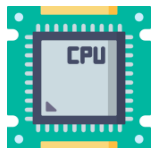
<https://desktop.rc.nectar.org.au>

# Virtual Desktop catalogue



# Virtual Desktop resources

Each desktop is allocated:



8 VCPUS



16GB RAM



50GB Disk



**Boost** for 16 VCPUS and 32GB RAM!

REBOOT



Restart

SHELVE



Stop

EXTEND



Extend  
+14 days

BOOST



Boost  
+7 days

DELETE



Bye!  
A R D C  
Australian Research Data Commons

# Jupyter Notebook Service


- Notebooks are documents that combine code (e.g. Python) with rich text elements (e.g. images, equations, interactive elements, etc)
- Notebook documents are both human-readable documents containing the analysis description and the results (figures, tables, etc..) as well as executable documents which can be run to perform data analysis.
- The Jupyter Notebook service allows users to log in and create, execute and share notebooks easily.



# Getting access

<https://jupyterhub.rc.nectar.org.au>

Sign-in with your Institutional credentials via the Australian Access Federation (AAF) and you're straight in!



The image shows the landing page for the ARDC Nectar Research Cloud Jupyter Notebook Service. At the top, there is a black header with the ARDC Nectar Research Cloud logo on the left and the text "Jupyter Notebook Service About" on the right. Below the header, the main content area has a white background with a central heading: "Welcome to the ARDC Nectar Research Cloud Jupyter Notebook Service." Underneath this heading, a smaller line of text states: "This is a service of the Australian Research Data Commons (ARDC) and utilises the ARDC Nectar Research Cloud." Below that, a link for "Terms and Conditions" is provided. A prominent orange button labeled "SIGN IN WITH AAF" is centered on the page. The background of the page is decorated with various icons representing data science and research, including a globe, a pie chart, a bar chart, a line graph, a magnifying glass over a pie chart, a computer monitor displaying the Jupyter logo, a keyboard, a mouse, a document with a network diagram, a flask, a planet, and several code snippets like "for", "else", "def", "!=", "if", and "</>".

# Jupyter Notebook environments



## Standard environment

Adds command line tools useful when working in Jupyter applications.



## Data Science environment

Includes libraries for data analysis from the Julia, Python, and R communities.



## SciPy environment

Includes popular packages from the scientific Python ecosystem.



## R environment

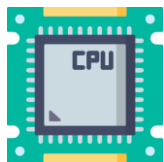
Includes popular packages from the R ecosystem.

Selection of customised environments depending on your requirements.

Looking to include R-Studio here soon and more to be added over time!

# Jupyter Notebook resources

Each Notebook is allocated up to:



4 VCPUS



7.5 GB RAM



10 GB Disk

Each session:



Up to 1 hour

After closing your browser window



Come back any time

Resume your session from where you left off

# BinderHub Service



<https://binderhub.rc.nectar.org.au>

Bring your own environment with Jupyter Notebooks!

ARDC Nectar Research Cloud BinderHub Service Home About Support Centre

## Welcome to the ARDC Nectar Research Cloud BinderHub Service.

This is a service of the [Australian Research Data Commons \(ARDC\)](#) and utilises the ARDC Nectar Research Cloud.  
By signing into this service, you accept the [Terms and Conditions](#)

**SIGN IN WITH AAF**

for

else

if

def

!=

</>

GitHub binder jupyter

# BinderHub

- Partnership between ARDC and AARNet
- Extension of JupyterHub
- Allows users to launch their own environments from a code repository (e.g. GitHub)
- Repo2Docker builds a container image with the repository code in a way that allows it to be used quickly and easily in a JupyterHub environment
- Service designed to foster collaboration, increase transparency, and facilitate the reproducibility of scientific findings emphasising the **F**indable, **A**ccessible, **I**nteroperable and **R**eusable (FAIR) principles.
- See Aleem Uddin's *FAIR for Jupyter Notebooks: A Practical Guide* poster



Subscribe to the  
**ARDC CONNECT**  
newsletter

# THANK YOU



[ardc.edu.au](http://ardc.edu.au)



[contact@ardc.edu.au](mailto:contact@ardc.edu.au)



[@ARDC\\_AU](#)



[Australian-Research-Data-Commons](#)



[ARDC\\_AU](#)