

Introduction to CEDA-JASMIN

Malcolm Roberts – 29-06-2023 – EERIE science hour (with thanks to Jon Seddon and the JASMIN team for their excellent documentation)





EERIE funding

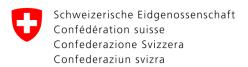
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CEDA-JASMIN platform



- One of EERIE's central places to do collaborative analysis on multi-model datasets
- One of the platforms we use for the EERIE hackathon in November during the GA
- UKRI fund CEDA-JASMIN, and they are one of our EERIE partners as well

Basic aspects – accounts etc



- Much of the basics are in the EERIE onboarding document via Jon's instructions
 - https://github.com/jonseddon/eerie_instructions
 - including how to get an account, how to get set up to access CMIP data etc.
 - Home directory: /home/users/<username> (100 GB space)
- Group Work spaces (GWS)
 - These are the spaces to put large datasets that you want to keep
 - Note that EERIE only has ~250 TB GWS disk space in total for the whole project, as well as 50 TB object store
 - We also have access to the tape archive not going to talk about this today
 - GWS path: /gws/nopw/j04/eerie/
 - To request permission to read/write to the EERIE GWS, visit: https://accounts.jasmin.ac.uk/services/group_workspaces/?query=eerie
- CMIP data available on disk
 - /badc/cmip6/data/ (need to link accounts, see eerie_instructions above)



JASMIN services



- Login via servers, e.g.
 - ssh -Y -A <username>@login2.jasmin.ac.uk
- Interactive analysis servers sci[1-8].jasmin.ac.uk
 - for interactive work and testing scripts, not for long, intensive processing
 - different servers have smaller/larger memory and variable loading
- LOTUS batch cluster 19,000 core batch computing system
 - used for long and intensive jobs, workflows
 - https://help.jasmin.ac.uk/category/4889-slurm
 - different queus for short/long jobs, all using slurm
- Experimental GPU cluster
 - need to register https://help.jasmin.ac.uk/article/4951-gpu-testing
- Directories for writing
 - As well as the GWS, there are various scratch directories to write intermediate files from workflows
 - https://help.jasmin.ac.uk/article/4700-understanding-new-jasmin-storage
 - depends on need for speed, file size, parallel write etc



Using JASMIN – software etc



- Software on JASMIN
 - https://help.jasmin.ac.uk/category/270-software-on-jasmin
- Environments
 - standard modules (module load) are
 - jaspy (python), jasmin-sci (extra software), jasr (R programming)
 - Can also choose particular variants of these e.g. python3.x (at least for some time)
- ESMValTool also available:
 - https://help.jasmin.ac.uk/article/4955-community-software-esmvaltool
- Own environments and software
 - Can also install your own environment and software, including via conda and virtual python environments
 - https://help.jasmin.ac.uk/article/5074-conda-environments-and-pythonvirtual-environments
 - https://help.jasmin.ac.uk/article/5075-creating-and-using-miniconda-environments



Hackathon resources



- JASMIN has hosted previous CMIP6 hackathons
 - https://cmip6moap.github.io/resources/
 - Variety of example Jupyter notebooks in github repos from these events
- Perhaps we can follow some similar ideas, e.g. at end of hackathon
 - commit any code, notebooks etc to our GitHub repo
 - Identify one or more figures that could be showcased
 - Store any data for future use in a GWS
- Notebooks
 - jupyter notebooks and service is available
 - https://help.jasmin.ac.uk/article/4851-jasmin-notebook-service



Potential future options



- Data management tool (DMT)
 - One implemented in PRIMAVERA
 - https://prima-dm1.jasmin.ac.uk/received_data_quick_query/
 - This is able to search PRIMAVERA-HighResMIP data in CEDA ESGF
- Plan to do something similar for EERIE
 - to make finding (and making available) data (across platforms this time) easier
 - This awaits Jon Seddon's return
- However, data can be searched in ESGF too (Pablo Ortega can demonstrate)

