The JASMIN Analysis Platform at STFC

What is JASMIN?

JASMIN is a high performance data centre with to 44 Petabytes of storage and 12,000 compute cores providing the UK and European climate and earth-system science communities with an efficient data analysis environment. Just under one quarter (9PB) of the storage is reserved for an archive of high value datasets, including the Couple Model Intercomparison Project 6 (CMIP6), ECWMF Re-Analysis 5 (ERA5) and ESA Climate Change Initiative (CCI). A large part of the remaining storage is available for collaborative projects, now accessible to all European scientists through IS-ENES3. Many datasets, particularly model data, are too big to be easily shipped around: JASMIN enables scientists to bring their processing to the data. More information at www.jasmin.ac.uk, or contact our helpdesk at support@ceda.ac.uk (including IS-ENES3 in the subject line).

What resources are available?

The **CEDA Data Archive** is hosted on JASMIN: thousands of data collections, including CMIP6 simulations, re-analysis datasets and large satellite datasets. Full details are in the catalogue at http://archive.ceda.ac.uk/. Data not currently present in the archive can be replicated onto JASMIN on-demand, subject to resource and licensing constraints.

The **JASMIN analysis cluster** allows users to log onto servers which have direct access to the data in the archive, so that analysis of large datasets can be carried out without transferring large data volumes between computer centres [see 1]. Access to JASMIN compute services is open to UK research scientists and their collaborators and also to consortia awarded access by IS-ENES3.

In addition to the basic login access, which provides users with limited resources which may be used to explore the archive, teams can apply for **Group Work Spaces** and dedicated virtual machines. Group Work Spaces provide teams with a shared area of disk space which can be used for storage and exchange of analysis results [see 2]. Through the TNA process we envisage supporting projects with Group Workspace ranging from 5TB to 20TB storage allocation.

Dedicated virtual machines allow teams to deploy their own software systems in an environment which they control [see 3]. This servers are suitable for projects with complex software requirements.

For heavy computing work there is a **batch system** available [see 4]. Work which requires significant execution time should be submitted to the batch system to avoid overloading the interactive servers.

References:

1: Interactive work: help.jasmin.ac.uk/article/204-interactive-computing-overview
2: Group Work Spaces: help.jasmin.ac.uk/article/199-introduction-to-group-workspaces
3: Private Servers: help.jasmin.ac.uk/article/174-project-specific-servers .
4: Batch computing: help.jasmin.ac.uk/category/107-batch-computing-on-lotus