

## Service level Description for the Centralised Research and Specialist Computing Support Service

The description covers the provision and support of the Research and Specialist Computing Support service which covers the UEA High Performance Computing (HPC) Cluster, UK eScience Certificates, research storage requirements and specialist research IT and computing requirements. The service also provides advice and support on a range of IT and computing issues relating to research including specialist hardware and software requirements, technical liaison and assistance with IT based funding and grant applications.

### Service description:

The services provided by Research and Specialist Computing Support consist of:

1. The provision and support of the High Performance Computing cluster, which provides high performance and high throughput computing facilities to the UEA research community. The HPC service provides access to processing facilities consisting of high performance compute nodes; parallel processing facilities; large memory systems; and high availability storage.
2. Assistance with code and application optimisation and support within HPC and other of research computing areas.
3. The local Registration Authority (RA) for e-Science Certification, issuing digital certificates to members of e-Science projects allowing them to use Grid resources both inside the UK and in international collaborations.
4. Specialist desktop support including the provision and support of a standardised specialist Linux desktop that conforms to UEA security and authentication standards. Specialist Linux support available for the University of East Anglia research community.
5. Provision and support of bespoke software for instrument control and data collection, database applications and dynamic websites.
6. Provision and support of a Subversion and Trac services, providing version control, project management and bug-tracking functionality.
7. The provision of assistance, advice and support on a range of IT and computing issues relating to research. This may include: IT and computing requirements for research projects; specialist IT support service for researchers; contact information and/or liaising with other ISD teams, university community based experts or vender software/hardware experts.
8. Assistance and advice on purchase of specialist research IT and computing requirements. Coordinate requests for specialist software, hardware and services, including negotiating and purchasing software licences etc. Coordinating specialist IT hardware for use in research and managing a centralised loan scheme.

9. Assistance and advice on IT based grant application and funding, including national HPC costing and UEA HPC FEC.
10. Advice, support and training on research storage issues, including: best practice guidance on data storage and data security; advice on meeting research council and data access provider requirements; advice on handling sensitive data, encryption, secure access and safe disposal.
11. Advice and support to research community on IT security.
12. Training and support, including for High Performance Computing and research storage. Training available ranges from informal one-on-one training to more formal lab sessions. Training backed up with web support material, including user driven wiki site.
13. Liaison and service promotion including presentations and both internally run outreach events and events run in collaboration with external partners, service providers and software and hardware vendors, enabling the development of research ideas.
14. Act as a single point of coordination for all research IT and computing issues, coordinating common needs from the research community to work up proposals for central service provision.
15. Specialist technical staff available for part time assignment to specific research projects.

The Research and Specialist Computing Support service is primarily intended for use by the University of East Anglia research community, with some limited use where appropriate for undergraduate projects and teaching and collaborative research use with external institutes such as the Norwich Research Park.

### **Scope:**

The Research and Specialist Computing Support service will attempt to assist with all research based IT and computing requests made, especially those listed in this service description. However, the following generally fall outside the scope of the service:

- Standard Desktop support / laptop support (first point of contact should be local support, then IT helpdesk. If all other avenues fail, then Research and Specialist Computing Support may be able to offer further information)
- Academic work and computing research (i.e. research into computing) outside specific project attachment
- Providing advice on information compliance: DPA and Copyright. These should be referred to the Information Policy and Compliance Manager
- Providing advice on depositing publications and use of data archives. These should be referred to the Head of Academic Services in the Library.

## **Service hours and service availability:**

The service hours for the Research and Specialist Computing Support service are core office hours. The Research and Specialist Computing Support team attempt to provide the HPC cluster service for twenty-four (24) hours a day, seven (7) days a week, three hundred and sixty five days a year (365), within which there is a target reliability of 99% not including two days scheduled downtime.

The end user should be aware that from time to time the service may be inaccessible or inoperable for any reason, including, without limitation: (i) equipment malfunctions; (ii) periodic maintenance procedures or repairs which the Research and Specialist Computing Support team may undertake from time to time; or (iii) causes beyond the control of or which are not reasonably foreseeable by the Research and Specialist Computing Support team, including, without limitation, interruption or failure of telecommunication or digital transmission links, hostile network attacks, network congestion or other failures.

Because of the nature of the work on the HPC Cluster, a regular fixed 'at risk' period is not appropriate; instead all efforts will be made to notify users in advance of any necessary unscheduled maintenance work. Where possible, maintenance work will be carried out on redundant resilient systems in a way to minimise disruption to users.

## **Service continuity:**

Every effort is made to retain HPC cluster services even in the event of multiple system failures – failover solutions are in place on cluster management servers, with global filesystems on multiple attached storage servers across geographically separated compute suites; secure storage is regularly backed up. Dedicated scratch storage is provided by high availability high resilient storage array. All dedicated cluster hardware is covered by either Dell next business day (compute nodes) or Dell 4hr response business support (scratch storage array).

## **Customer support:**

The Research and Specialist Computing Support team, following standard core office hours, would normally expect (under standard staffing levels) to respond to support requests from users within a maximum of two working days of the request being submitted through the appropriate contact lines. Following requests for UK eScience certificate authorisation, meetings are expected to be arranged for within two working days of request where staffing levels allow. Support requests and the appropriate contact details include, but are not limited to:

Contact: [rsc@uea.ac.uk](mailto:rsc@uea.ac.uk)

- General research computing requests
- Enquiries regarding research storage requirements, security and access
- Research IT and computing costing enquiries
- UK eScience certificate requests
- NGS queries

Contact: [hpc.admin@uea.ac.uk](mailto:hpc.admin@uea.ac.uk)

- HPC cluster software installation requests
- HPC cluster account requests

- HPC cluster issues
- HPC cluster general enquiries
- HPC fEC and grant application enquiries

Contact details subject to change based on the uptake of ESD.

### **Responsibilities:**

The Research and Specialist Computing Support team are responsible primarily for the HPC cluster, and aim to provide a service that meets the requirements of the UEA research community, as well as meeting this service description.

The Research and Specialist Computing Support team aim to provide prompt advice and/or support relating to all research IT and computing requests and if necessary, consultation with either other ISD teams or external parties.

The UEA research community should consult the Research and Specialist Computing Support team for the following, preferably before the start of a research project:

- Research desktop or server requirements
- Regarding any security issues relating to research systems, research storage or specific research IT or computing security requirements
- Regarding specific research project storage requirements including security, encryption, access, disposal and handling of sensitive data
- Before purchasing any specialised research IT or computing equipment or software licenses

Users of the HPC cluster have the following responsibilities:

- Adhere to the standard UEA conditions of computer use (details available at <http://www.uea.ac.uk/is/itregs/usepols>)
- Report any issues relating to the HPC cluster as soon as possible through the correct lines of contact
- Consult the Research and Specialist Computing Support team before any significant increase in HPC cluster usage or HPC storage requirements
- Avoid antisocial use of the HPC cluster, be it relating to overly heavy use of cluster resources or software licenses, without consultation the Research and Specialist Computing Support team. This includes testing new code and experiments either interactively or in manageable conditions before running large scale batch / parallel jobs
- Alert the Research and Specialist Computing Support team of any change in account status
- Include full economic costing for the HPC cluster appropriately in grant applications, in consultation with the Research and Specialist Computing Support team
- Acknowledge the use of the Research and Specialist Computing Support service High Performance Computing cluster as appropriate in publications resulting from work carried out using the HPC facility
- Categorise data and store / secure appropriately (in terms of backup procedure, encryption, access control etc)

Users applying for UK eScience Certificates have the responsibility to:

- Ensure certificates are dealt with securely as detailed in <http://www.ngs.ac.uk/certoverview>
- Adhere to the NGS terms and conditions set out on <http://www.ngs.ac.uk/ngs-terms-and-conditions>