Post Details	Last Updated: 19/10/2022
Faculty/Administrative/Service Department:	Research Computing IT Services
Job Title:	Lead Infrastructure Operations Engineer
Job Family & Job Level:	Professional Services	**Level 5**
Responsible to:	Head of Research Computing
Responsible for:	A team of Research Computing System administrators & Engineers

Job Purpose Statement

To be responsible for the day-to-day management of the Research Computing infrastructure operations team, which is tasked with the development and support of IT infrastructure, systems and services required by the University to enable and enhance its Research and teaching activities.

The post holder will manage the workload of the team ensuring sufficient focus is given to identified priorities, by adopting and driving agile methodologies to ensure our goals align with that of the University's Strategy. They will also mentor and train team members and identify training needs to inform our long-term skills development strategy.

The post holder will play an active role in the provisioning, installation, configuration, security, operation and general health management of physical and virtual compute resources both on-premises, in 3rd party Co-location facilities and in the cloud. This includes High Performance Compute clusters, Storage and backup systems, authentication and directory services, infrastructure management tools and general IT infrastructure components with a strong focus on Linux based systems overall.

Provide a high level of technical expertise and support within IT projects, including the purchase and deployment of new Research computing systems and services, ensure system stability, security and availability and create technical and user documentation to support live services.

Key Responsibilities

This document is not designed to be a list of all tasks undertaken but an outline record of the main responsibilities (5 to 8 maximum) and should be read in conjunction with the accompanying Job Purpose.

1. **Team Leadership** – manage workload, performance and development of a team of IT operations specialists by building capability to deliver services as required. Keep up to date with developments in High performance computing and systems management and ensure they are discussed, disseminated and implemented within the team, identifying training and staff development needs as required.

2. **Monitoring and management** – Maintain and develop monitoring and management tools ensuring they are kept up to date, developing and documenting manual and scripted automated responses to alerts. Ensure the team is responsive and focused to monitoring data and alerts. Use monitoring history to identify future systems work, both remedial and feature development, and incorporate these into both technical strategy and financial planning.

3. **Incident and Change** – Manage a case load of incident and change requests ensuring SLA's are met and a high level of customer service is maintained. Ensuring major changes are delivered in accordance with the IT services change management procedures. Where incidents have no published workaround or standard changes are not applicable, find and document new workarounds and resolutions and ensure such information is appropriately disseminated across the team. Be responsible for allocating time and resources as required, managing the workload of the team whilst ensuring priorities are given sufficient focus.

4. **Provisioning new and upgrading current systems** – Create infrastructure and service development plans in-line with agreed technical strategy, and ensure new systems and services are fit for purpose, deployed promptly and accurately documented ensuring operational acceptance is reached. Ensuring we eliminate technical debt wherever possible and keeping systems patched and compliant with the University's cyber security requirements. Work with 3rd party vendors and Suppliers to deploy new systems and ensure existing systems are supported and maintained.

5. **Documentation and knowledge transfer** – Develop and maintain knowledge base articles and user facing documentation for new and existing systems and services. Ensuring they are robust and accurately and appropriately communicated. Mentoring members of the team and IT Services,

ensuring they have the knowledge via documentation and knowledge transfer sessions to confidently react to incidents and carry out change.

6. **Continual improvement** - Proactively contribute to the continual improvement of IT processes, procedures, quality of support and statistical information and working practices across within the team and IT services. Identify training needs of the team, including those that may be necessary to implement future services as defined in service planning and development.

7. **Service Ownership** – Be the technical service owner for a range of Research Computing services. Keeping user and system documentation up to date and delivering knowledge transfer to the users of the system. Ensure regular and accurate reporting of service status to the head of Research Computing.

N.B. The above list is not exhaustive.

All staff are expected to:

Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities Policy.

Help maintain a safe working environment by:

- Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand.
- Following local codes of safe working practices and the University of Surrey Health and Safety Policy.
- Excellent environmental performance is a strategic objective for the University of Surrey. All staff are encouraged to work to achieve the aims of our Environmental Policy and promote awareness to colleagues and students.
- Undertake such other duties within the scope of the post as may be requested by your manager.

Elements of the Role

This section outlines some of the key elements of the role, which allow this role to be evaluated within the University's structure. It provides an overview of what is expected from the post holder in the day-to-day operation of the role.

Planning and Organising

- The post holder is responsible for managing and tracking a case load of IT support issues and tasks usually escalated to them via the first line IT support services, in addition to work on multiple concurrent projects. The post holder organises their own time and prioritises their workload, setting their own targets within the objectives set by their line manager.

- The post holder will be expected to have an understanding and awareness of important priorities for the user base, the business context, and key services which must be maintained. They will be expected to use this knowledge to manage conflicting demands on their time and be aware of different options available to resolve issues, making logical and practical decisions, and referring appropriately to their line manager.

- The post holder will need to demonstrate a considerable level of flexibility in order to respond to urgent, unexpected issues or queries passed to them, and reprioritise both support and project work accordingly, while maintaining contact with users, management and colleagues as appropriate. The post holder will need experience of managing the workload of others to ensure multiple concurrent streams of work are completed on time.

Problem Solving and Decision Making

- Within the scope of the role the post holder will independently face technical problems or issues in relation to the diagnosis of hardware and software faults, the restoration, reconfiguration and upgrading of hardware/software, the configuring and testing of new hardware prior to installation and the independent testing of software prior to its release in a live environment. Resolution for these issues will usually be found through referring to their previous experience of similar problems and/or through referring to departmental policies and procedures or through conducting internal and external research.

- The post holder may work within established procedure and guidelines but will be expected to exercise significant initiative in the interpretation and use of procedure in achieving the required results, acting but also recognizing the further implications of those actions. The post holder can refer unprecedented or policy-based issues to their line manager for advice or guidance.

- The post holder must use their communication skills to diffuse potentially difficult situations where users are under pressure and may become frustrated or impatient and should judge appropriately when they need support from their line manager, other colleagues or further escalation procedure.

- The role involves providing technical support, often in person, to all members of the University community at any level of seniority; academic staff, professional services staff, students and post-graduate researchers.

Continuous Improvement

- The post holder is expected to take a proactive approach to their work, reviewing past and present incidents and change requests to identify opportunities to improve service.

- The post holder will recommend formally or informally to management, improvements in working methods, processes or services and implement them as appropriate under the guidance of their line manager.

- The post holder will be involved with colleagues in testing technical changes prior to release and reporting on concerns which would affect the reliability, supportability and ease of use of specific products and solutions.

- The post holder will provide input to budgeting and resource planning activities to ensure investment is made for continuous improvement in neglected or sub-standard systems or services.

- The post holder will be expected to keep their own professional knowledge of IT systems, equipment, services and solutions current, building and using internal and external networks of contacts, and exploring independent sources of research.

Accountability

- The post holder is responsible for ensuring that service and infrastructure remain available, secure and reliable. While they will have substantial freedom to execute this responsibility, subject to application policies, it is expected that the post holder engages with IT Change management procedures and the Head of Research Computing on any major changes from agreed plans.

- The post holder acts as point of contact with staff using the system/service end users and must therefore be able to provide a high level of customer service, utilising their knowledge to resolve queries and solve problems in a timely and professional manor. Through the course of their work, the post holder may have access to systems containing data of a sensitive or confidential nature and therefore it is essential that they ensure that all data is always held securely.

Dimensions of the role and Supplementary information

- We operate a hybrid remote working model. The post holder will be expected to attend campus or 3rd party co-location datacentre facilities if required during their duties, particularly in response to incidents that require an on-site presence. There is an expectation that the post holder will work on campus a couple of days a week as standard, however this is flexible, we are not currently operating any strict schedules or rota's the post holder will have the freedom to choose what days they work remotely or on site.
- The post holder will work in a close team environment providing IT management, maintenance and support across the University under the day-to-day guidance of the Head of Research Computing. They will be involved in both pro-active management and reactive support of specialised servers, including HPC Clusters, Storage systems, infrastructure servers and Linux based desktop systems. There will be significant involvement in 2nd line IT support activity, including user documentation, incident-ticket life-cycle management and problem diagnosis and solving.
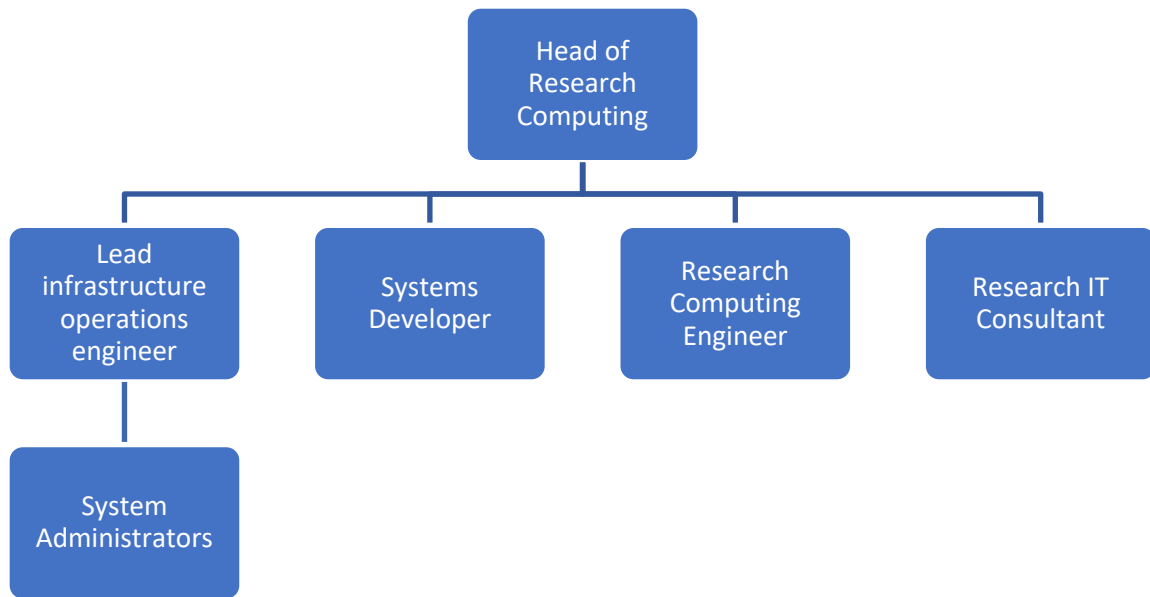
- The post holder will work closely with the Head of Research Computing to develop technical strategy that aligns with the University's Research strategy and ambitions.
- The post holder can expect to come under considerable pressure from staff and must be able to retain their confidence through effective communication and delivery of commitments.

Person Specification This section describes the sum total of knowledge, experience & competence required by the post holder that is necessary for standard acceptable performance in carrying out this role.

Qualifications and Professional Memberships	
Degree, HND, NVQ 4, qualified or equivalent in a relevant subject, with some relevant experience OR Significant vocational experience, demonstrating development through relevant roles	E
Appropriate technical qualification (e.g. Microsoft or RedHat Certification)	D
ITIL Foundation Service Management qualification	D

Technical Competencies (Experience and Knowledge) This section contains the level of competency required to carry out the role (please refer to the Competency Framework for clarification where needed and the Job Matching Guidance).	Essential/ Desirable	Level 1-3
Experience of investigating, diagnosing and resolving incidents on behalf of a varied user base, relating to hardware and software faults, human error and service failures	E	3
Proven and deep Linux skills in the installation, configuration, management, and support of services, including HPC, scientific computing or equally complex environments.	E	3
Experience of working independently and without close supervision, including self-motivating interest in exploring and researching current and trends in IT.	E	3
Experience of managing or supervising the work of others or taking the lead on numerous large-scale projects which involves delegating tasks to others, coordinating their work and managing timelines.	E	3
Experience of working with DEVOPS practices, infrastructure as code, using configuration management tooling such as ANSIBLE / CHEF / PUPPET or similar.	D	n/a
Experience of the Higher Education and Research sectors and an understanding of their challenges and trends.	D	n/a

Special Requirements:	Essential/ Desirable	
Would be required to undertake out of hours work in an emergency, or on specific, managed occasions.	E	
Full UK Drivers License	D	

Core Competencies	Level 1-3
Communication	2
Adaptability / Flexibility	2

Customer/Client service and support	3
Planning and Organising	2
Continuous Improvement	2
Problem Solving and Decision-Making Skills	3
Leadership/Management	1
Creative and Analytical Thinking	2
Influencing, Persuasion and Negotiation Skills	2
Strategic Thinking & Leadership	1

This Job Purpose reflects the core activities of the post. As the Department/Faculty and the post holder develop, there will inevitably be some changes to the duties for which the post is responsible, and possibly to the emphasis of the post itself. The University expects that the post holder will recognise this and will adopt a flexible approach to work. This could include undertaking relevant training where necessary.

Should significant changes to the Job Purpose become necessary, the post holder will be consulted and the changes reflected in a revised Job Purpose.

Department Structure Chart

```
                    ┌──────────────┐
                    │   Head of    │
                    │   Research   │
                    │  Computing   │
                    └──────┬───────┘
        ┌──────────────┬───┴───────┬──────────────┐
┌───────┴──────┐ ┌─────┴──────┐ ┌──┴──────────┐ ┌─┴──────────┐
│     Lead     │ │            │ │   Research  │ │            │
│infrastructure│ │  Systems   │ │  Computing  │ │ Research IT│
│  operations  │ │ Developer  │ │   Engineer  │ │ Consultant │
│   engineer   │ │            │ │             │ │            │
└───────┬──────┘ └────────────┘ └─────────────┘ └────────────┘
┌───────┴──────┐
│    System    │
│Administrators│
└──────────────┘
```

Relationships

Internal

Regular contact with all members of the University community at all levels of seniority; academic staff, professional services staff, students and post-graduate researchers, to resolve IT problems, fulfil requests for new services or resources and to provide effective technical advice.

Close working relationship with IT Services colleagues in own team and across the function and liaising with other teams in the University providing services which touch on the IT service provision.

External

Contact with established and prospective external suppliers, consultancy organisations and special interest groups to resolve issues, answer questions and research options.