

## High-Performance Computing (HPC) Specialist

Job Ref: REQ260056

### School/Department Summary

IT Services is located in Holywell Park, a scenic part of our green campus with good transport links and ample parking. Recognised as one of the top institutions nationally for IT resources and facilities in the National Student Survey, Loughborough's IT Services team is proud of its reputation for excellence. We foster a friendly and supportive culture that values work-life balance, offering flexible and hybrid working opportunities. Our staff enjoy collaborating on innovative, University-wide projects that brings together a rich mix of skills, backgrounds, and experiences.

### Job Description

**Job Grade:** Management and Specialist, Grade 6

#### Job Purpose

This role will provide specialist knowledge and skills in the support, maintenance and development of the University's High-Performance Computing (HPC) systems and services and other infrastructure managed by the Research HPC team.

The University HPC cluster is based upon Linux systems including high-performance storage systems and interconnects, and all supporting applications and monitoring systems.

The role will be involved assisting with the full lifecycle of testing, procurement, configuration, deployment, re-configuration, fault finding and decommissioning of server and storage equipment.

The role holder requires a strong working knowledge of Linux servers in a production environment, UNIX shell (bash), Perl, Python, etc.

#### Job Duties

- Support, maintain and assist with development of the Research HPC IT systems. This involves assisting the service lead(s) with requirements analysis and procurement and the configuration, testing, deployment, re-configuration, fault finding and secure decommissioning of services. This includes the development and maintenance of documentation of the systems.
- Work as an effective member of Loughborough's Research HPC team, with an emphasis on day-to-day system management and providing support to users of the High Performance Computing services.
- Provide introductory training sessions for researchers and assist module tutors in providing introductory training sessions for taught-course students, create supporting training documentation.
- Assist the service lead(s) with particular aspects of the services, such as: provision of a stable service; technical development; monitoring of quality and performance; production of regular reports; change, incident and request management; risk management; contributing to defining standards and monitoring

compliance; routine maintenance; liaison with hardware and software suppliers; changes e.g. new versions of system software, firmware, patches.

- Participate in projects, working across the University, which plan and develop new technical platforms for IT services and assist in rolling out these services to users. When assisting in designing and delivering IT services, IT Services Specialists liaise with customers to understand and analyse their requirements, contribute technical content, and work to provide innovative IT solutions to support business critical University functions.
- Identify opportunities to automate tasks in order to improve the delivery of IT service to customers. Undertake the design, build and test of scripts to implement these tasks.
- Receive requests for support from other service delivery staff, researchers, module tutors and students. Prioritise requests in accordance with agreed criteria and the needs of the organisation. Monitor progress of requests for support and ensures users are kept informed. Take corrective action to avoid or minimise delays.
- Within own areas of competence, provide correct responses to requests for support by means of for example: making system modifications in accordance with the defined change process, developing work-arounds or site-specific enhancements, reconfiguring systems, changing operating procedures, training users or operations staff, producing additional documentation, or escalating requests to other staff or software suppliers. Ensure all work is carried out and documented in accordance with required standards, methods and procedures.
- In accordance with agreed procedures, monitor application systems for which responsible by regular scrutiny of reports from the applications software or systems software. Note problems, identify performance trends and reports on them to the service lead(s). Take corrective action to improve performance and to avoid problems arising as part of the agreed change process.
- Ensure that documentation of the supported systems and software is available and in an appropriate form. Ensure log entries of user contacts provide sufficient information for the resolution of subsequent faults and problems.
- Conduct investigations of operational problems, make proposals for improvement, and implement them when appropriate as part of the agreed change process. Participate in reviews of systems performance and in the planning of amendments and upgrades to systems.
- Develop and maintain knowledge of the technical specialism by, for example, reading relevant literature, attending conferences and seminars, meeting and maintaining contact with others involved in the technical specialism and through taking an active part in appropriate professional and trade bodies.
- Be familiar with relevant University procedures and policies (EDI, acceptable use, data protection, freedom of information, information security, purchasing etc) and advise colleagues and end-users accordingly.
- Undertake various other tasks on an occasional basis at the request of more senior staff in the professional service, and to a level commensurate with training, knowledge, grade and skills.

*Note: This job description was created in the spirit of the BCS (The Chartered Institute for IT), SFIA (Skills for the Information Age) level 4 with support from the BCS.*

## Points To Note

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility outlined in the document.

*This role involves access to technology and data subject to U.S. Export Control laws. Under these laws, providing access to controlled technology to citizens or permanent residents of Country Group D as defined in [Supplement No. 1 to Part 740](#) of the EAR regulations is subject to a deemed re-export licence. The successful appointment of candidates who are citizens or permanent residents of Country Group D is therefore contingent on the successful outcome of a deemed re-export licence application.*

## Organisational Responsibility

Reports to the: Research HPC Team Manager.

## Person Specification

Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

- 1 – Criteria measured within the Application
- 2 – Criteria measured at Test/Assessment Centre/Presentation
- 3 – Criteria measured at Interview

### Essential Criteria

Area	Criteria	Stage
Experience	Experience in management of IT services with significant user populations	1
	Experience managing Linux servers in a work environment	1,3
	Experience managing shared storage systems in a work environment	1,3
	Experience building, installing and testing serial and/or parallel software for HPC systems	1,3
	Experience of working effectively as part of a team	1,3
	Displays a responsible attitude to following procedures, keeping records, and caring for equipment and other assets	1
	Has a good knowledge and understanding of IT concepts and architectures, coupled with some knowledge of problem management and the principles and processes of implementing and delivering IT services	1,3
Skills and abilities	Shows aptitude for analysing and managing problems arising from incidents in the operation of information systems, combined with the ability to provide technical solutions	1,3
	Ability to manage and orchestrate Linux server Operating Systems and applications	1,3
	Good technical investigation skills, the ability to research and collate information from a variety of sources into technical reports and recommendations	1
	Demonstrates good communication skills with an aptitude for dealing with users, colleagues and suppliers.	1,3

	Knowledge of programming or scripting: UNIX shell (bash), Perl, Python, etc.	1,3
	Excellent written skills to write technical procedures, reports, system specifications etc.	1
	Ability to schedule your own workload and prioritise your work	1
Training	A willingness to undertake further training and to learn and adopt new procedures as and when required	3
	Ability to assimilate technical information and keep up-to-date in your field	1,3
Qualifications	Degree with relevant IT/Computing content OR relevant professional IT qualifications and/or experience	1

#### Desirable Criteria

Area	Criteria	Stage
Experience	Experience providing introductory IT training to end users	1,3
	Experience with cluster management, scheduler configuration, software deployment	1,3
	Experience managing a web site	1
	Experience in a customer-facing role	1
	Experience within the HE/FE sector	1
	Experience with change management and configuration management processes	1,3
Skills and abilities	Show the potential to become adept in administering an HPC service, e.g. cluster management, scheduler configuration, software deployment.	1,3
	Practical skills in running a HPC service. For example: node imaging, monitoring, scheduler and resource management, user account management.	1,3
	Use of queueing and scheduling systems such as: Torque, SLURM, Maui and MOAB.	1,3
	Use of automation/orchestration tools such as Ansible, Puppet, Chef, Kubernetes, etc.	1,3
	Knowledge of programming languages such as: C, C++, Fortran, Perl, Python	1,3
	Knowledge of data networking and high-performance interconnects	1,3
	Technical authoring experience and proven documentation track record	1,3
	Knowledge of web server technology such as Apache, PHP and HTML	1
Training	ITIL Foundation training and accreditation	1
	Prince 2 Foundation training and accreditation	1
	Linux certification such as LPIC-1	1
Qualifications	A commitment to equity and diversity with the ability to role model, adhere to and advocate the University's Equity and Diversity policy.	1

## Conditions of Service

The appointment will be subject to the [University's Terms and Conditions of Employment](#) relevant to the job grade.

## Shared University Responsibilities

As a member of the Loughborough community, you are expected to:

- Take reasonable care of yourself, others and the environment, and to prevent harm by your acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Sustainability Policies & Procedures.
- Uphold and actively contribute to the [University's commitment to Equity, Diversity, and Inclusion](#), ensuring that all duties are carried out in alignment with this.

## Our Purpose, Vision, and Values

Our purpose, Vision and Values underpin all that we do and shape how we work together at Loughborough.

We're proud to promote our values: **Adventurous, Collaborative, Creative, Authentic and Responsible**. Our people bring these values to life every day, and they are central to the positive and supportive culture that makes Loughborough unique.

If you join us, you'll be encouraged to bring these values to life in your own work and contribute to the positive, supportive culture that makes Loughborough unique.

Read more about our [vision and values](#).

## Our Accreditations



We strive to create a culture that supports equity and celebrates diversity throughout the campus. The University holds a [Bronze Athena SWAN award](#) which recognises the importance of support for women at all stages of their career.



We are proud to be a [Race Equality Charter Member](#). The Charter aims to improve the representation, progression and success of all minority ethnic staff and students within higher education and address issues of racism within higher education institutions (HEIs).



We are proud to be a Disability Confident Employer and have adopted a proactive approach to employing disabled people and to creating a more diverse workforce. We ensure that our recruitment processes are inclusive and accessible. We guarantee to offer an interview to all applicants who have declared a disability, provided that the essential criteria for the role are met. We proactively anticipate and provide reasonable adjustments and support existing employees who acquire a disability or long-term condition to thrive in the workplace.



We are a real living wage employer, and our Living Wage Employer Mark shows our commitment to paying our staff according to the cost of living.



We are proud supporters of the [City of Sanctuary movement](#) and delighted to be recognised as a University of Sanctuary. This national network brings together, university staff, lecturers, academics, and students, who together work to make Higher Education institutions places of safety, solidarity and empowerment for people seeking sanctuary.

**As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.**