|  |
| --- |
| **JOB DESCRIPTION** |

|  |  |
| --- | --- |
| **SPECIFIC JOB TITLE** | HPC ENGINEER  |
| **GENERIC ROLE TITLE** | BUSINESS MANAGER |
| **LEVEL/GRADE** | E |
| **JOB FAMILY** | BUSINESS SUPPORT |
| **CONTRACT TYPE** | 12 MONTHS FTC |
| **HOURS** | 37 PER WEEK |
| **REPORTS TO** | HEAD OF IT SERVICES |
| **DEPARTMENT** | INTELLIGENT DATA ECOSYSTEMS (IDE) - IT SERVICES |
| **LOCATION** | HARPENDEN |
| **DATE**  | June 2024 |

|  |
| --- |
| **OVERVIEW OF ROLE/JOB PURPOSE** |
| Following recent, successful funding of £4m for new High Performance Computing infrastructure, Rothamsted Research is recruiting for an HPC Engineer, holding Nvidia certification and significant experience in supporting GPU based HPC nodes for modelling, simulations, AI, machine learning, big data analytics, and edge computing for processing massive datasets. The successful candidate will support the HPC service at Rothamsted by helping to fully implement, configure, and fine-tune a brand new, state of the art, HPC cluster including a 16Tb large memory node and multiple Nvidia H100 GPU nodes. Experience of liaising with vendors at the appropriate technical level is also required. You will be a member of the team responsible for the effective evaluation, planning, deployment, operation, and continuous development of the new Linux/HPC technical infrastructure (Rocky 9) using your experience and knowledge of Slurm, EasyBuild, Conda, Ansible, Salt, Docker, Apptainer and other relevant technologies. You will provide guidance for use and administration of the new HPC infrastructure and associated IT elements and ensure appropriate support is provided to our bioinformatics and data science teams in the delivery of strategic programmes and research projects across the institute. The role requires a broad knowledge of IT infrastructure, and the ability to hold discussions at the appropriate levels with scientific researchers to address their technical requirements. You will provide technical support triage, troubleshooting and recommendations to scientists on how this new HPC infrastructure can benefit and optimise their research. Moreover, the role will also require the development and delivery of Linux and HPC training courses/workshops, as well as the creation of technical and supporting documentation to promote the HPC infrastructure across the business. The role-holder is expected to carry out the duties listed below, and any other duties reasonably required by the line manager or Institute, commensurate with the grade and level of responsibility for this post. Candidates who are able to commence as soon as possible will take priority. |
| **MAIN DUTIES OF ROLE** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Generic Outputs** | **Weighting** | **Description of Outputs**  | **Description of Job Specific Duties** |
| **BUSINESS SERVICE DELIVERY**  | 40% | Smooth and efficient running of own work area, including application of specialist knowledge to solve non-routine problems, develop new systems, policies and procedures, generate reports and prepare management information | * Provide HPC related guidance and knowledge across the business.
* Proactively support and administer the entire Linux server environment, to ensure it is operating at the required levels of performance with the relevant controls and governance applied.
* Perform system administration tasks such as maintaining the automated OS patching and template creation for server rebuilds.
* Provide specialist (advanced) user support for Linux systems, including configuration and deployment of specialist applications.
* Create internal technical support documentation and develop training material to facilitate delivery of workshops for end users.
* Contribute towards the implementation plans for the introduction of the new HPC equipment.
* Assist with the ongoing support of the existing HPC infrastructure evaluating usage and ongoing longevity.
 |
| **FINANCE AND RESOURCE MANAGEMENT** | 15% | Monitoring of allocated budgets, contributing to resource planning | * Ensure the costs of any system renewals or required investments are reported to the Head of ITS.
* Track, and update the costs of the HPC implementation vs the funding budget and timing allocation.
* Ensure that all systems are correctly licensed.
* Provide accurate costings for system repairs / replacements where required in a timely manner.
* Contribute to technical specification of IT infrastructure according to the funding model.
* Identify potential cost savings by evaluating usage requirements of existing HPC.
 |
| **WORKING WITH OTHERS** | 20% | Building relationships with customers, colleagues and external contacts, raising profile of team/work-unit and provision of specialist advice on all aspects | * Co-create a plan for the institute detailing the implementation, commissioning, and rollout of all new HPC related equipment.
* Work with the ITS Systems team to ensure that all relevant systems are functioning to the required levels.
* Work with the researchers to ensure they have the resources they need and understand what is available to them.
* Provide guidance and support to the institute on upgrades or new systems implementation.
* Work with external contractors and suppliers where required to ensure infrastructure is updated and operating effectively.
* Develop relationships with other institutes where required to investigate opportunities for infrastructure enhancements or data sharing.
 |
| **LEADERSHIP AND MANAGEMENT**  | 20% | Managing a business support team and/or ensuring performance and quality standards in terms of service provided | * Be a key point of contact in the institute for the relevant infrastructure.
* Work with colleagues in the ITS systems team to ensure a timely resolution to all fault reports.
* Ensure provision of consistent and accurate support information to all users.
* Ensure any planned upgrades or outages are raised via the formal change management process and users are notified in advance to give sufficient warning of any downtime.
 |
| **CONTINUING PROFESSIONAL DEVELOPMENT** | 5% | Expanding knowledge base/skill set via both planned and ad hoc learning opportunities and encouraging own self-reflection through activities such as mentoring/ coaching/critical career reviews and promoting knowledge sharing among others | * Continue with own development regarding in-house systems.
* Assess potential systems that we may invest in to provide further functionality to users.
* Attend specialist training as required and identify personal knowledge gaps where further self-development is needed.
 |

|  |
| --- |
| **PERSON SPECIFICATION AND SHORTLISTING CRITERIA\*** |

|  |  |
| --- | --- |
| **SPECIFIC JOB TITLE** | HPC ENGINEER |
| **GENERIC ROLE TITLE** | BUSINESS MANAGER |
| **LEVEL/GRADE** | E |
| **JOB FAMILY** | BUSINESS SUPPORT |
| **CONTRACT TYPE** | 12 MONTH FTC |
| **HOURS** | 37 PER WEEK |
| **REPORTS TO** | HEAD OF IT SERVICES |
| **DEPARTMENT** | INTELLIGENT DATA ECOSYSTEMS (IDE) - IT SERVICES |
| **LOCATION** | HARPENDEN |

|  |  |  |  |
| --- | --- | --- | --- |
| **EDUCATION/QUALIFICATIONS** | Essential | Desirable | How Tested?\*\* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. | Professionally qualified with a relevant degree in IT, Computer Science or related/ postgraduate qualification or equivalent technical experience. |  |  | A, IV, CERT |
| 2. | Industry professional certifications relevant to the role e.g., Nvidia, Linux |  |  | A, CERT |

|  |  |  |  |
| --- | --- | --- | --- |
| **EXPERIENCE/KNOWLEDGE/SKILLS** | Essential | Desirable | How Tested?\*\* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. | Experience in Linux/Unix configuration and system management including security and patching for Rocky, CentOS and Ubuntu. |  |  | A, IV |
| 2. | Strong technical skills in the configuration and operation of HPC clusters with GPU capability.  |  |  | A, IV |
| 3. | Strong technical skills including knowledge of cluster management software and administrative processes.  |  |  | A, IV |
| 4. | Ability to deeply understand application functionality and technical documentation required. Knowledge and experience supporting on-premise or cloud HPC clusters with GPU capability |  |  | A, IV |
| 5. | Experience with IT infrastructure change management processes and ticketing software (Halo ITSM) |  |  | A, IV |
| 6. | Broad knowledge of IT system administration tools (shell scripting, monitoring performance, backup and disaster recovery) |  |  | A, IV |
| 7. | Ability to troubleshoot, diagnose and resolve complex systems issues and application performance. |  |  | A, IV |
| 8. | Experience with VMWare administration and configuration  |  |  | A, IV |
| 9. | Have the confidence to perform a focal point role for the supported infrastructure and deliver workshops/training for end users |  |  | A, IV |

|  |  |
| --- | --- |
| **BEHAVIOURS/COMPETENCIES** | How Tested?\*\* |

|  |  |  |
| --- | --- | --- |
| 1. | **Drive for Quality**: Works to and sets stretching goals | A, IV |
| 2. | **Strategic Thinking**: Anticipates emerging organisational needs and manages current situations accordingly | A, IV |
| 3. | **Creativity and Innovation**: Seeks to generate a range of innovative ideas when addressing problems or new issues | A, IV |
| 4. | **Developing Self and Others**: Promotes sharing of knowledge and expertise among others | A, IV |
| 5. | **Professional Conduct**: Adopts a transparent and open approach | A, IV |
| 6. | **Productive Relationships**: Solicits input from others when tackling problems or generating new ideas | A, IV |
| 7. | **Effective Communication**: Strong verbal and written communication and interpersonal skills. | A, IV |

|  |  |  |  |
| --- | --- | --- | --- |
| **GENUINE OCCUPATIONAL REQUIREMENTS** | Essential | Desirable | How Tested?\*\* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. |  |  |  |  |
| 2. |  |  |  |  |

 \* Minimum requirements of the post and how they will be assessed

 \*\* Evidence of criteria will be established from: **A** (application), **IV** (interview),**Test**

 (skills test/prepared question/presentation), **Cert** (certificated checked by interview

 panel)