University of Edinburgh

1. Job Details

Job title: **Grid Systems Administrator**

School: **School of Physics**

Unit: **National e-Science Centre**

Line manager: **NeSC Systems Manager**

2. Job Purpose

To facilitate the smooth running of computing systems at NeSC and to provide support to users of grid services on HPC systems.

3. Main Responsibilities

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<th>Approx. % of time</th>
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<td><strong>Helpdesk duties:</strong> assisting computing support staff where appropriate, in order to ensure the speedy and satisfactory resolution of any complex or critical problems that may occur.</td>
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<td><strong>Systems administration:</strong> providing advice about available services; procuring new hardware; installation, configuration, monitoring and maintenance of existing server hardware, operating systems and applications to ensure the security, robustness and smooth running of all services.</td>
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<td><strong>Grid middleware support:</strong> deploying grid middleware on a variety of HPC systems; providing support for grid middleware to enable research staff to access HPC resources</td>
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<td><strong>Grid middleware development:</strong> keeping abreast of emerging grid technologies, attending meetings at a national and international level; deploying emerging grid technologies in order to evaluate performance and usability.</td>
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<td><strong>ScotGrid hardware, operating system and middleware support:</strong> maintenance, troubleshooting, patching, OS and middleware upgrades coordinated across 190 sites.</td>
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4. Planning and Organising

- The job holder is expected to plan and prioritize event driven work. In particular, the job holder must be responsive to critical security problems and service outages on Grid middleware platforms that can affect multiple sites across Europe and worldwide.
- The job holder is expected to plan operating system and middleware upgrades up to three months in advance while ensuring minimal disruption to services. Upgrades often have to be coordinated across multiple sites.
- The job holder is expected to proactively seek out meetings and conferences to attend, in order to improve understanding of Grid middleware and engage with the Grid community.
5. Problem Solving
- The job holder is expected to tackle complex issues by planning a course of action, scheduling time around other support activities to work on the issue, interacting with vendors and other support staff as appropriate.
- The job holder is required to demonstrate strong investigative and analytical skills allied to detailed knowledge of hardware, networking, operating systems and Grid middleware. Problems involving middleware can be extremely complex, involving many remote sites, multiple users and many independent software components.

6. Decision Making
- The job holder will be expected to make all of the day-to-day decisions associated with supporting staff, researchers, visitors and interacting with vendors.
- The job holder will be expected to allocate available hardware resources to tackle problems and improve services as necessary.
- Decisions that require considerable project planning and investment of effort will be taken in consultation with the Systems Manager.

7. Key Contacts/Relationships
- The job holder will be expected to form good working relationships with all NeSC staff and visitors, software and hardware vendors and EUCS staff.
- The job holder will be expected to form good working relationships with researchers within the University, with researchers and systems administrators researchers involved in the GridPP collaboration and in the wider Grid community.

8. Knowledge, Skills and Experience Needed for the Job
- A good Honours degree, preferably with some systems design training.
- At least two years experience of installing, configuring and maintaining RedHat Enterprise Linux (or other GNU/Linux distribution) and/or Solaris.
- At least two years experience of installing, configuring and maintaining Grid middleware such as Globus, LCG, Condor and web services.
- Practical experience configuring TCP/IP networks.
- Practical experience of scripting and/or programming in Perl, C/C++ or shell scripting languages. Additional experience of OO design would be desirable.
- Excellent interpersonal skills.

9. Dimensions
- NeSC has 40+ staff.
- Computing support team provides technical support for 60+ PCs and laptops and 150+ person/days per month of events, manages email for 15 domains and hosts 25 web sites.
- Computing infrastructure comprises 12 servers, a 20-node development cluster, a 22 seat PC training lab, two ‘Access Grid’ videoconferencing suites, two internal networks and a wireless LAN service.
- ScotGrid (Edinburgh), running as part of the GridPP collaboration, comprises 13 servers and 32 Terabytes of storage and is part of a worldwide network of 35000 CPUs located at 190 sites in 37 countries.

10. Job Context and any other relevant information
NeSC is an outward facing project of the University, which manages the e-Science programme for the whole UK. Its visibility places great responsibility on staff to perform at the highest level at all times. GridPP is a collaboration of particle physicists and computer scientists from the UK and CERN. They are building a distributed computing Grid across the UK for particle physicists.