1. Job Details

Job title: Systems Manager

School/Support Department: Physics

Unit (if applicable): National e-Science Centre (NeSC)

Line manager: e-Science Institute (eSI) Deputy Director

2. Job Purpose

Overall responsibility for the IT Infrastructure of the National e-Science Centre and manager of the Centre’s computing support team.

3. Main Responsibilities

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<th>Approx. % of time</th>
<th>Responsibility</th>
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<tr>
<td>40</td>
<td>1. Manage the overall operation of the IT infrastructure to ensure that staff and visitors are able to work efficiently and effectively.</td>
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<td>2. Implement and maintain security measures to enable NeSC staff, developers, researchers and visitors (which groups have different and often conflicting requirements) to have appropriate access to IT services and data, and to maintain the integrity and quality of the infrastructure.</td>
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<td>3. Liaise with users, project leaders and senior management to establish requirements; develop, implement and maintain solutions to ensure that IT services grow to meet new requirements and challenges facing NeSC.</td>
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<td>4. Supervise and develop the computing support team so that staff have the motivation and skills to deliver required levels of performance.</td>
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<td>5. Develop and implement plans for backup and disaster recovery to minimise disruption in the case of failure.</td>
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<td>6. Develop communication mechanisms with users so that they know how best to use the IT infrastructure and its capabilities.</td>
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4. Planning and Organising

The job holder must have full understanding of the current state of IT operations within NeSC, the University and at a national UK level, and of its future development. Planning is at all levels: At the operational level in response to incidents requiring immediate attention and routine work such as scheduled maintenance tasks, and at the tactical level development of new services to cover expanded activity such as the introduction of the MSc in e-Science. At the strategic level, with a remit to plan the future direction of IT infrastructure the job holder must have an understanding of how user requirements are likely to change over time and where hardware and software developments are likely to lead in the future.

5. Problem Solving

The job holder faces major challenges every day, dealing with service outages and security problems, balancing those with high-priority management tasks whilst ensuring that other tasks are still completed in a timely and satisfactory manner. Project work must be
progressed on several fronts, with consideration for dependencies that can span several projects and other initiatives.
As an example: While staying within budget, develop a scaleable IT infrastructure to support the M.Sc. in e-Science that will:
- Provide a robust and reliable teaching environment while at the same time
- Allow students to install Grid services and applications which require unlimited access to the underlying operating system.

6. Decision Making
The job holder is line managed by the eSI Deputy Director, but holds full responsibility for the management of the IT infrastructure and computing support team. Examples:
- Implementing a helpdesk system and establishing a rota is done independently.
- Complicated personnel issues such as dealing with extended sick leave of a staff member in consultation with the line manager.
- Major restructuring of NeSC IT infrastructure or recruitment of additional staff would be done in consultation with senior management.

7. Key Contacts/Relationships
The job holder has day to day contact with NeSC staff and senior management. They are also in regular contact with other School computing staff, staff in the Network Services Division of EUCS, academic staff and researchers within and outside the University as well as external suppliers of services and equipment. The job holder also keeps close links with the UK-wide groups such as the Grid Support Centre and the Grid Network Team, in relation to UK initiatives on networking, security and the Grid.

8. Knowledge, Skills and Experience Needed for the Job
- The technical depth of the job and the research orientation of the Centre necessitate a good Honours degree, preferably with some systems design training.
- Five years experience of managing a mixed OS environment.
- In depth knowledge of UNIX and Windows enterprise solutions including mail services, and networking technology including TCP/IP protocol, Cisco and 3Com switches, routing, firewalling and network monitoring.
- Solid understanding of Grid technology including Globus, Condor and Web Services.
- In depth knowledge of web provision including Apache configuration, scripting with Perl, PHP, ColdFusion, and implementing web based tools such as wikis and forums.
- Minimum 2 years experience of managing a team.
- Good interpersonal skills with a consultative approach to problem solving and an ability to maintain good vendor relationships.

9. Dimensions
- A team of 3 direct reports – 1 X AD2 + 2 X CD2
- NeSC has 40+ staff with 60+ desktop machines/laptops running a variety of OS’s.
- Responsible for £162k expenditure on IT equipment (2005 figure).
- Two training labs for 20+ people each and two 20 node clusters.
- Two internal partitioned networks, our own wireless LAN service.
- 25 domains associated with email routing, mailing lists and web sites that we host.

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, and its rapid growth provides a significant challenge for anyone involved in the management of resources and planning for the future.