Position Description

Senior Linux Systems Administrator

Translational Research Institute, Brisbane, Australia

1. Background

The Translational Research Institute (TRI), based in Brisbane, is a leading Australian innovative medical research, development and translation facility. It is home to a range of cutting edge technology developments including interventions to prevent and treat human disease and provide diagnosis of early treatable disease. Situated on the Princess Alexandra Hospital Campus TRI combines the research intellect and capability of the University of Queensland, the Mater Research Institute, Queensland University of Technology and the Princess Alexandra Hospital. Housing up to 750 leading researchers and interfacing with the clinicians on the Hospital campus, and with the adjacent biopharmaceutical manufacturer, Patheon Biologics, TRI is one of a few places in the world where new biopharmaceuticals and treatments can be discovered, produced, clinically tested, and manufactured in one location. TRI is charged with interfacing scientific development with the commercial sector ensuring that scientific innovation is moved rapidly to improve patient outcomes. To this end TRI is at the interface of science, medicine and industry.

Details of research and current academic staff working at TRI can be found on TRI’s web site at www.tri.edu.au.

2. The Position

Reporting to the IT Manager, the purpose of this 12mth contract Senior Linux Systems Administrator position is to improve the service delivery to clients based at TRI. The Senior Linux Systems Administrator is expected to architect, implement, maintain, document and support the infrastructure required for the efficient delivery of central services to the TRI partners, and is aimed to significantly improve the turn-around time on requests relating to research use of the HPC, as well as bolster the administration of the central DMF based HSM, and allow TRI members to focus on achieving their collaborative research goals.

The role has a particular focus on centrally provided systems for use by all building occupants, and thus requires extensive familiarity with the Linux OS, Virtual Machine hosting, networking including the firewalls, supporting researchers on HPC systems as well as a broad background in file serving and storage systems.

Systems for which this role is particularly relevant include:

- HPC environments, including PBS;
- Storage systems, including DMF and Lustre;
- VMware/vSphere hosting;
• Cisco ASA and Fortigate Firewalls; and
• Operating systems including RHEL/CentOS 6 & 7 and SLES 11.

Further, this role has a strong focus on supporting the overall IT team with technical guidance and system customisation to allow a more responsive environment and greater adaptability to needs by a dynamic, research focused organisation, including:
• Monitoring and self-healing systems;
• Centralised Configuration Management;
• Automated Enterprise Linux deployment;
• Backup services; and
• High availability configuration of internally hosted services as appropriate.

The emerging focus for TRI is on improving and streamlining service delivery. Out of this a requirement for broader IT capabilities is required to offer a consolidated service delivery model that can offer efficiency improvements to the TRI partners and their researchers. Thus the role requires a strong focus on system architecture and middleware, with deep understanding of how design decisions effect future options.

The Senior Linux Systems Administrator must have considerable experience in providing Linux or Unix system administration with strong background in architecting and implementing IT solutions, considering security best practices, and an ongoing effort to improve deployed solutions. As part of this, a familiarity with a broad range of services hosted on Linux, Windows and other platforms is essential, as well as the technologies that connect them and that they rely upon. The ability to evaluate and select the most appropriate products to create a solution is also essential.

In addition to providing Linux focused system administration, this position also offers technical guidance to other team members, participate in escalation of helpdesk break/fix related tasks ranging the entirety of TRI’s setup. Participation in collaboration with TRI partner clients and team activities is also required.

3. Key Responsibilities

Primary Purpose of Position

• Administration of locally managed Linux hosts;
• Offer technical guidance on a broad range of IT topics spanning Linux, Windows, VMware, Networking and Storage; and
• Architect solutions for teams within TRI, to provide new or refreshed IT services.

Duties

The duties and responsibilities of the Senior Linux Systems Administrator include but are not limited to:

Service Administration

• Administer a range of physical and virtual Linux hosts running CentOS, RHEL and SLES;
• Support users of the HPC environment’s PBS system;
• Administer firewall rules at both the network and host level;
• Provide Tier1, Tier2 and Tier3 (advanced) support for Linux, Windows, OS X and other operating systems to clients and other team members on an appropriate priority basis;
• Participate in the resolution of issues of various degrees of criticality as reported by clients and team members pertaining to hosted services including storage, HPC, networking and anything provided by TRI, be it hosted locally or by an external provider;
• Plan, develop, deploy and continually review appropriate strategies for virtualization, server management, storage and all services offered to TRI clients, to ensure all mission critical functions are performing secure and stable at maximum potential;
• Undertake small programming or scripting tasks, such as tools to assist the IT team or implement services for the organisation, in consultation with or at the direction of the IT Manager;
• Identify means of implementing or improving services and processes;
• Offer advice and support to TRI staff for options on implementing or enhancing new and existing services and processes; and/or refer to the IT Manager when necessary;
• Notify the IT Manager of any previously undetected outages, and be available during critical incidents and other emergencies to assist with resolution of issues;
• Assist the IT manager to develop IT budgets, and manage strategies, taking into consideration equipment replacements, licensing, network access, training expenses and associated IT staff, costs and policies, potentially in collaboration with representatives from TRI partners;
• Introduction of new technologies and investigation and implementation of solutions;
• Communicate technical solutions to TRI staff; and
• Other technical work as required.

Other
• Liaise, engage and collaborate with research staff and TRI partner members to better understand IT issues and address them by implementing appropriate solutions;
• Ensure compliance with all requirements of Queensland Occupational Health and Safety (OH&S) regulations as they apply to the role.
• Understand and implement TRI policy in such areas as Work Health and Safety;
• Comply with TRI’s Code of Conduct;
• Adopt sustainable practices in all work activities and comply with associated legislation and related sustainability responsibilities and procedures developed by TRI;
• Perform administrative support when required; and
• Other duties as required by the IT manager or his/her nominee.

4. Reporting Relationships

The position reports to the IT Manager.

5. Selection Criteria

Skills and Knowledge

Essential
• Tertiary based, broad knowledge of design and engineering principles within storage, high performance compute and networking;
Highly developed analytical, problem-solving and organisational skills including constructively dealing with new problems and a proven track record in finding and implementing creative solutions to problems;

Ability to provide Tier3 escalation support for a wide range of server operating systems including, but not limited to, Linux and Windows 2008/2012;

Core concepts in virtualisation platforms such as VMware;

Disaster recovery experience and practical skills in Linux and Windows storage and server environments;

Backup concepts and practical considerations;

An understanding and practical experience of DMF, SAM-QFS or other HSM system;

Ability to rapidly deploy and centrally maintain Linux systems, with strong background in tools such as Monit, CFEngine, Puppet, Chef and Kickstart;

Ability to show initiative and introduce new technologies or solutions;

Ability to deliver complete sets of documentation relating to the development of systems; and

Knowledge of a range of scripting languages such as Python, Perl and BASH.

**Desirable**

- Advanced security concepts;
- Familiarity administering SE Linux policy; and
- Knowledge of authentication technologies (especially AD and LDAP).

**Experience**

**Essential**

- Minimum of five years’ experience in managing a substantial server and client environment, featuring a mix of operating systems and technologies;
- Experience:
  - managing a substantial storage environment;
  - managing a substantial High Performance Compute setup;
  - monitoring systems and telemetry analysis technologies (e.g., Sensu, Nagios, Splunk and ELK);
  - in performance profiling and troubleshooting;
  - creating, maintaining and improving documentation and processes;
  - with Linux/Unix administration capabilities for file servers; and
  - in planning, deploying, maintaining and managing virtualization infrastructure.

**Desirable**

- Experience with Fibre Channel SAN planning, deployment, maintenance and management;
- Experience with InfiniBand infrastructure;
- Experience in the administration of databases (MySQL and Postgresql), PHP and backup systems (especially Atempo and ArcServe); and
- Experience with Cisco switching for 10GigE infrastructure and firewalling.

**Personal Qualities**

**Essential**

- Extremely strong customer service orientation with dedication to customer satisfaction and the ability to liaise with clients at a technical and non-technical level;
- Ability to work with minimal supervision, and as part of a team;
- Excellent interpersonal skills with strong communication and comprehension skills;
• Result or goal oriented approach with strong awareness of deadlines, and an ability to prioritise;
• Demonstrated ability to work effectively and remain calm under conditions of frequent disruption and the pressure of client demands;
• Accuracy and attention to detail with good organisational skills;
• A commitment to acquiring new skills and knowledge in IT;
• Analytical skills sufficient to assess problems and propose appropriate solutions; and
• A strong commitment to the continuous improvement, performance enhancement and advancement of the server and storage infrastructure to aid research outputs and ultimately drive the organisation forward.

Qualifications

Essential
• A degree in Computer Science, Information Technology, Software Engineering or a closely related discipline plus a minimum of seven years subsequent relevant experience; or extensive relevant experience and management expertise; or an equivalent combination of qualifications and/or experience.

Desirable
• Unix/Solaris/Linux certifications, such as RHCE;
• Other vendor certifications such as CCNA;
• ITIL v3 certification; and
• VMware and Storage certification and/or training.