



NEPTUNE Canada

UNIVERSITY OF VICTORIA

Mission Critical Systems Administrator

The NEPTUNE Canada and VENUS projects represent a total of over \$120M to establish innovative regional cabled observatory systems with hundreds of sub-sea scientific instruments in the deep sea off the coast of British Columbia. The project is made possible by funding from the Canada Foundation for Innovation, the BC Knowledge Development Fund and CANARIE Inc. The University of Victoria hosts the two projects. The goal is to utilize the recent advancements in fibre optic communication technology to enable scientists on shore to probe the mysteries of the ocean and allow the world to share in their incredible discoveries. The development of powered, fibre-optic cabled observatories covering a wide range of marine environments will allow, for the first time, real-time observations that establish a comprehensive interactive database and decadal time-series. Details of the NEPTUNE project can be found on the website: <http://www.neptunecanada.ca/> and VENUS is present under <http://www.venus.uvic.ca/>.

Responsibility:

As a member of the NEPTUNE Canada Data Management and Archiving System (DMAS) group and more particularly of the Systems and Operations Team, the successful candidate will be involved in the installation, implementation, administration, maintenance and ongoing support of all operating systems, communications systems, home-grown software as well as third party applications systems such as relational database management systems, enterprise service busses, underwater telecom and power infrastructure control systems. This will include hardware, software as well as networking components necessary to run NEPTUNE Canada and VENUS DMAS' mission critical systems at both our data centres and shore stations. Duties will include conducting systems analysis, systems integration, investigating hardware, software, data communications, and service innovations for suitability to DMAS requirements. Other duties may include analysis of project objectives and scope, estimating costs and other requirements, providing an expert level of consulting and training services by maintaining current knowledge of new developments.

Duties and responsibilities:

In detail, the duties will include:

- Assemble hardware including computer racks, rack-mounted equipment, cabling and peripherals of various types
- Install the necessary operating system software components on the computers, particularly Unix type OSes and standard tools
- Install, configure and maintain hard disk arrays (e.g., SAN, NAS)
- Support an operational computer environment consisting of a variety of operating systems and applications
- Manage the systems in use to ensure maximum availability using pro-active measures, appropriate monitoring and remote control technologies
- Monitoring a variety of systems using a Network Management System (Zenoss)
- Reporting of issues and their resolution in an electronic logbooks (Wiki, Jira)
- Following manufacturer's instructions in the resolution of a problem
- Documenting procedures for all aspects of observatory operation and maintenance

- Supervise or provide technical direction to more junior analysts or specialists also assigned to those projects when necessary.
- Some heavy lifting and working near high voltage equipment may also be required
- Participate in an on-call roster with 3 other individuals to respond to emergencies outside regular working hours

Job knowledge requirements:

The duties will require significant experience in some or all of the following areas:

- Linux/Unix system administration, with special emphasis on:
 - installation and maintenance of virtual hosts
 - installation and maintenance of development tools such as subversion and wikis
 - J2EE / Tomcat experience
 - Layer2/3 networking configuration and firewalls
- iSCSI SAN disk systems
- Familiarity with computer-based log books, schedulers, calendars etc. such as wikis and bug trackers is essential
- An understanding of RDBMS (Oracle, MySQL, Sybase or MS-SQL) from a sys admin point of view is essential. Familiarity with basic DBA tasks would be a definite plus
- The ability to automate monitoring tasks through scripting using Bourne shell, Perl and/or Python is essential
- The capability to understand a complex power and data transmission systems, acquired through formal education or otherwise
- Experience in the operation of Telco grade managed switches and routers and/or SONET equipment would be an advantage
- Knowledge of Windows PC management and networking is important

Educational Requirements:

The successful candidate will have at least an undergraduate degree in Electrical Engineering or Computer Science and several years of closely related experience or equivalent mix of qualifications and experience. Essential qualifications include excellent problem solving and interpersonal skills as well as a strong technical background in relevant technologies.

Profile of the person:

NEPTUNE Canada is looking for a highly motivated individual who will have a passion for participating in large scientific research endeavour. The successful applicant will have the ability to make operational decisions impacting a highly sophisticated system. S/he will moreover report suggestions to supervisory personnel and is expected to perform the duties within a growing team, therefore a good team spirit together with professional work practices, in particular where operational systems are concerned, is required. The ability to learn new technologies and implement them in a secure and reliable manner is essential.

Reporting line:

The successful candidate will report to the DMAS Systems and Operations team lead, with work assigned on a project basis or in an area of continuing responsibility, which will be reviewed for progress toward the stated objectives.

Work location:

The work will primarily be performed on the University of Victoria campus, at the NEPTUNE Canada premises. Some work will be performed at the Shore Station in Port Alberni, BC and there will be occasional trips to shore stations located in Sidney and Vancouver.

Working time:

Working time will normally be 35hr/week with on-call duty outside regular working hours.

Conditions:

This position is initially offered out to June 2012 with possibility of renewal subject to funding availability.