The University of Texas at San Antonio

Job Description

Job Title:	Enterprise HPC System Engineer
Code:	17503
Salary Grade:	63
FLSA Status:	Exempt
Department/Division:	Information Technology
Reports To:	Senior Enterprise Systems Engineer

Summary

- Function: Performs proof of concepts on parallel file system and system administration duties on several high performance multi-platform clusters, cluster management, virtualization, visualization of clusters, and job scheduling.

- Scope: Responsible for designing, implementing, and administering High Performance Computing (HPC) clusters.

Duties

- Typical:

1. Designs, implements and administers high performance computing cluster, performing proof of concepts on parallel file system (GPFS, IBRIX, and Luster).
2. Performs system administration duties on several high performance multi-platform clusters, cluster management, virtualization, visualization clusters and job scheduling.
3. Facilitates the acquisition of hardware and software products and services for the Research Data Center (RDC).
4. Monitors the availability of patches and updates and evaluates the importance to the environment and schedules installations accordingly.
5. Interacts effectively with a broad range of colleagues such as researchers, professors, research assistants, colleges and departments throughout campus.
6. Supports a diverse user population from researchers, professors, research assistants, colleges and departments throughout campus with the administration and installation of HPC operating systems.
7. Maintains abreast of current technologies with the latest HPC hardware and software technology and evaluating technologies as needed.
8. Provides reliable and efficient backups/restores for all managed systems in the RDC (as requested by system owners).
9. Sets up and maintains host and network based security of the RDC resources.

10. Coordinates with vendors to resolve hardware and software problems to systems in the RDC
11. Responsible for system implementation/integration and systems performance analysis.
12. Participates in a 24-hour, 7-day on-call support rotation and off-hours maintenance windows.
13. Manages software applications in the production environment provided to HPC users.
14. Knowledge of all Microsoft Office software and able to learn and use institutional software systems.
15. Complies with all State and University policies.
16. Other duties may be assigned

- Periodic:
  1.

Education

Required	Preferred
Bachelor's degree from four year college or university within area of assigned responsibility. Technical training and/or experience may be substituted for a degree on a year for year basis.	N/A

Other Requirements

Required	Preferred
While performing the duties of this job, the employee is regularly required to sit and talk or hear. The employee is occasionally required to stand or walk. The employee must occasionally lift and move up to 40 pounds. Must be organized with a strong ability to deliver tasks on time, manage multiple efforts and be able to work with minimal supervision. Demonstrated ability to proactively learn, adapt to and use new hardware/software technologies	N/A

Experience

Required	Preferred
Five years of experience with enterprise architecture engineering and experience with clustered HPC environments; or equivalent	N/A

combination of education and experience to include experience as a systems administrator. Five years experience with common server hardware architecture including servers (CPU, bus, memory), SANS, disk arrays, network hardware. In depth understanding of Operating Systems (e.g., Windows, Solaris, Linux), including processes, files, memory management and I/O systems; distributed information systems including 2 and 3 tier designs, and web based systems; networking services and protocols (e.g., TCP/IP, SSL, FTP, Telnet, LDAP, DNS). In depth understanding of IP networking, basic routing, TCP ports and network services, including SSH, LDAP, SFTP and HTTP(S). Ability to design, promote, and implement change control and configuration management, patch management, high availability systems, structured design and support methodologies. Demonstrate experience in programming system maintain tasks in C, Java, Perl, batch/shell, or other general purpose programming language; perform complex performance analysis including system processes, I/O subsystems, networks and other related components. Knowledge of Linux and UNIX operating including scripting and programming proficiencies. Must have advanced ability to analyze, design and architect complex IT systems. Must have experience with multi-threading and parallel processing tools and environments. Demonstrate abilities in sustaining the overall security of the HPC systems. Experience with high-performance servers and associated high-performance networks.	

Experience installing and maintaining clustered environments, including automated installation methods.	

Equipment

Required	Possible
Personal computer and standard office equipment. High performance server hardware and networking equipment.	N/A

Working Conditions

Usual	Special
Personal computer and standard office equipment. High performance server hardware and networking equipment.	N/A

Supervision

Received	Given
General supervision received from Senior Enterprise Systems Engineer.	None.

Accuracy

Proficiency in all phases of the duties performed.

Security Sensitive

Specific job requirements or physical location of some positions allocated to this classification may render the position security sensitive, and thereby subject to the provisions of section 51.215 Texas Education Code.

Internal Control

Within the scope of position duties, responsible for seeing that operations are effective and efficient, assets are safeguarded, reliable financial data is maintained, and applicable laws, regulations, policies, and procedures are complied with.