



**University of Texas at El Paso
Job Description**

Job Code: 7503
Job Title: Enterprise HPC Systems Administrator
Department: Information Technology
Reports To: Systems Support Manager
FLSA Status: Exempt
Prepared By: Human Resource Services
Creation / Revision Date: October 27, 2010

Summary: Responsible for designing, implementing, and administering High Performance Computing (HPC) clusters. Performs proof of concepts on parallel file systems and system administration duties on several high performance multi-platform clusters, cluster management, virtualization, visualization of clusters, and job scheduling.

Note: The primary accountabilities below are intended to describe the general content of and requirements of this position and are not intended to be an exhaustive statement of duties. Incumbents may perform all or some of the primary accountabilities listed below. Specific tasks or responsibilities will be documented in the incumbents' performance objectives as outlined by the incumbents' immediate supervisor or manager. This position is security-sensitive and subject to Texas Education Code §51.215, which authorizes the employer to obtain criminal history record information. Must possess a valid driver's license issued by the State where the applicant resides and must be insurable as defined in the UT System BPM 16-05-02, as applicable to the performance of essential duties and responsibilities of the position.

Statement of Duties and Responsibilities:

Designs, implements and administers high performance computing cluster, performing proof of concepts on parallel file system (GPFS, IBRIX, and Luster).

Performs system administration duties on several high performance multi-platform clusters, cluster management, virtualization, visualization clusters and job scheduling.

Facilitates the acquisition of hardware and software products and services for the Research and Academic Data Center (RADC).

Monitors the availability of patches and updates and evaluates the importance to the environment and schedules installations accordingly.

Interacts effectively with a broad range of colleagues such as researchers, professors, research assistants, colleges and departments throughout campus.

Supports a diverse user population from researchers, professors, research assistants, colleges and departments throughout campus with the administration and installation of HPC operating systems.

Maintains abreast of current with the latest HPC hardware and software technology and evaluating technologies as needed.

Provides reliable and efficient backups/restores for all managed systems in the RADC.

Sets up and maintains host and network based security of the RADC resources.

Coordinates with vendors to resolve hardware and software problems to systems in the RADC.

Responsible for system implementation/integration and systems performance analysis.

Participates in a 24-hour, 7-day on-call support rotation and off-hours maintenance windows.

Manages software applications in the production environment provided to HPC users.

Knowledge of all Microsoft Office software and able to learn and use institutional software systems.

Complies with all State and University policies.

Other duties may be assigned.

Supervisory Responsibilities: Carries out supervisory responsibilities in accordance with the organization's objectives, policies and applicable laws.



Qualifications: To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Minimum Education required: Master's degree in Computer Science/Engineering or related discipline.

Minimum Experience required: Five years of experience, related to the statement of duties and responsibilities; or equivalent combination of education and experience. Have expert Enterprise Architecture engineering knowledge of clustered HPC environments. In depth knowledge of common server hardware architecture including servers (CPU, bus, memory), SANs, disk arrays, network hardware. In depth understanding of Operating Systems (e.g., Windows, UNIX, Solaris, VAX/VMS), 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). 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. Must have experience as a systems administrator. Knowledge of Linux and UNIX operating systems, 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. 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. Some travel may be required.

Physical Demands: The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

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 50 pounds.

Work Environment: The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is occasionally exposed to extreme cold and risk of electrical shock. The noise level in the work environment is usually moderate.