



## Manager, High Performance Computer Engineering (ITS) Job Description

### JOB INFORMATION

<i>Job Code:</i>	165883
<i>Job Title:</i>	Manager, High Performance Computer Engineering (ITS)
<i>FLSA Status:</i>	Exempt
<i>Supervisory:</i>	Manages through subordinate supervisors.; May oversee staff, students, volunteers, agencies and/or resource employees.
<i>Job Family:</i>	IT Management
<i>Job Family Group:</i>	Information Technology
<i>Management Level:</i>	5 Manager

### JOB SUMMARY

Directs and oversees the engineering functions in design, development, installation, and maintenance of hardware and software for the Center for High-Performance Computing (HPC) systems, according to stakeholder needs and the university's strategic vision. Leads, manages, mentors and builds a highly talented engineering team to deliver innovative advances in high-performance computing. Responsible for managing the planning, implementation, availability, performance, security, maintenance and repair of the high-performance computing infrastructure. Improves the integrity of networks, services and related hardware by applying leading-edge technical and operational knowledge to configure and maintain high performance computing server platforms. As part of the leadership team, models, and cultivates ITS culture, values, and behaviors.

### JOB QUALIFICATIONS:

#### Education

<i>Req</i>	<i>Pref</i>	<i>Degree</i>	<i>Field of Study</i>	
X		Bachelor's degree		
	X	Bachelor's degree	Computer Science	Or
	X	Bachelor's degree	Information Science	Or
	X	Bachelor's degree	in related field(s)	

#### Additional Education

**Check here if experience may substitute for some of the above education.**

X Combined experience/education as substitute for minimum education

#### Work Experience

<i>Req</i>	<i>Pref</i>	<i>Work Experience</i>	<i>Experience Level</i>	
X		8 years	of experience in IT, high-performance computing, or other related industries.	
	X	10 years	of experience in information technology, high-performance computing, or related field.	
	X	3 years	of experience in a management or leadership role.	

## Additional Work Experience

Check here if education may substitute for some of the above work experience.

Combined experience/education as substitute for minimum work experience

## Knowledge, Skills and Abilities

Req	Pref	Functional Skills
X		Demonstrated expertise in design configuration and planning.
X		Proficiency with low-latency/high-bandwidth interconnect infrastructure (Infiniband, Myrinet, 10GigE).
X		Expertise with HPC system software cluster management/provisioning tools, including job schedulers (Slurm, salt, xCAT).
X		Proficiency with shared and distributed memory parallelism (OpenMP, MPI), and accelerators (GPUs). Strong scripting ability (Bash, Perl, Python, etc.) and experience with programming fundamentals.
X		Expertise with administration, monitoring and maintaining secure Linux/Unix operating systems (CentOS, Solaris).
X		Experience establishing processes for maintaining system performance and managing best-in-class standards, and familiarity with cloud computing and container technologies.
X		Ability to understand and work with large, complex systems, identify and resolve problems, manage performance, and troubleshoot network issues related to infrastructure.
X		Expertise with multivendor hardware/software management, security, and network/Internet protocols.
X		Strong communication and interpersonal skills, with the ability to provide both detailed information and high-level summaries to management-level individuals and groups, present the business side of technical topics to non-technical audiences, and develop positive working relationships and strong rapport with team members.
	X	Ability to drive technical leadership and management of complex, large-scale computing systems' projects.
	X	Solid knowledge of HPC storage (e.g., FC, SAS), file systems (e.g., SAMFS/QFS, BeeGFS, ZFS), and NFS.
	X	Exemplary communication and interpersonal skills, with the ability to present the business side of technical topics to non-technical audiences, and persuasively and effectively interact with relationships with various stakeholders and diverse individuals and groups.

## Other Job Factors

## JOB ACCOUNTABILITIES

	% Time	Essential	Marginal	N/A
Directs and oversees the engineering functions in design, development, installation, and maintenance of hardware and software for the Center for High-Performance Computing (HPC) systems, according to stakeholder needs and the university's strategic vision. Contributes in cross-functional coordination, architecture discussions, and priority planning in a highly collaborative environment.				
Improves the integrity of networks, services, and related hardware by applying leading-edge technical and operational knowledge to configure and maintain high-performance computing server platforms. Drives server hardware and software life cycle management, helping to plan, develop, and deploy maintenance fixes to system				
Develops tests and plans for new high-performance computing systems and applications implementations, custom scripts, and testing procedures to ensure operational reliability for the campus; trains technical ITS organization staff in use of new software and hardware developed and/or acquired.				
Supports the HPC Engineering vision, working with other ITS leaders to develop and manage a holistic strategy for delivering service quality and continuous service improvement. Supports governance for software engineering through the implementation of standards and quality measures.				
Manages team member development, helping them set and achieve goals for their career growth. Fosters an inclusive environment that values team member differences, creating a sense of belonging and appreciation. Contributes to a culture of trust and transparency.				
Builds and maintains strong relationships with ITS leaders, customers, partners, and stakeholders. Works closely to identify, implement, and support cost-effective, leading solutions for HPC engineering, maintaining currency with				

## JOB ACCOUNTABILITIES

	% Time	Essential	Marginal	N/A
industry standards and innovations. Provides input around process optimization, department budgeting, and the monitoring and management of resources.				

## Other Requirements

<i>Essential:</i>	<i>Emergency Response/Recovery</i>	<i>Essential:</i>	<i>Mandated Reporter</i>
	In the event of an emergency, the employee holding this position is required to “report to duty” in accordance with the university’s Emergency Operations Plan and/or the employee’s department’s emergency response and/or recovery plans. Familiarity with those plans and regular training to implement those plans is required. During or immediately following an emergency, the employee will be notified to assist in the emergency response efforts, and mobilize other staff members if needed.		A mandated reporter who in his or her professional capacity has knowledge of, or reasonably suspects a person who is under the age of 18 years, elderly, or a dependent adult has been the victim of abuse or neglect must report the suspected incident. The reporter must contact a designated agency immediately or as soon as practically possible by telephone or in writing within 36 hours. By virtue of the associated job duties, this position qualifies as a mandated reporter as required by state law and USC’s policy at: <a href="https://policy.usc.edu/mandated-reporters/">https://policy.usc.edu/mandated-reporters/</a>
<i>Campus Security Authority (CSA)</i>			<i>Essential:</i>
By virtue of the associated job duties, this position qualifies as a Campus Security Authority as required by law and USC’s policy at: <a href="https://dps.usc.edu/alerts/clery/">https://dps.usc.edu/alerts/clery/</a>			No

## ACKNOWLEDGMENTS

The above statements reflect the essential and non-essential functions as necessary to describe the principle contents of the job. They are not intended to be a complete statement of all work requirements or duties that may be required of the position. I understand that I may be asked to perform other duties as assigned. USC reserves the right to add or change duties at any time.

The University of Southern California is an Equal Opportunity Employer. USC prohibits discrimination on any basis protected under federal, state, or local law, regulation, or ordinance or university policies. All employment decisions are based on individual qualifications and business need.

I acknowledge receipt of this job description and its associated physical requirements. I have read and understand the job description and job requirements and agree to abide by their contents. I realize that duties may be requested of me that are not specifically stated herein. I understand that I will be expected to adjust to potential fluctuations in work volume. I understand that, if I have any questions about the essential functions or expectations of my position, my supervisor and/or HR partner are available to discuss them with me.

\_\_\_\_\_  
Print Employee Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Manager Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

This job description describes the general nature and level of work required by the position. It is not intended to be an all-inclusive list of qualifications, skills, duties, responsibilities or working conditions of the job. The job description is subject to change with or without notice, and Management reserves the right to add, modify or remove any qualification or duty. Nothing in this job description changes the existing at-will employment relationship between the university and the employee occupying the position.