

UNIVERSITY OF SOUTHERN CALIFORNIA

Network Engineer (ITS)

Job Code: 167561

OT Eligible: No

Comp Approval: 7/9/2019

JOB SUMMARY:

Provides network engineering and technical support for LAN, WAN, and network infrastructure, ensuring university network systems are operating at peak efficiency with little or no downtime. Designs, configures, troubleshoots, and maintains university network equipment across multiple platforms. Ensures that all networking activities are aligned to industry best practices, as well as ITS and university policies, processes, and procedures. Provides technical and training assistance to other ITS teams, as needed. Demonstrates ITS values in action.

JOB ACCOUNTABILITIES:

***E/M/NA % TIME**

- | | | |
|-------|-------|--|
| _____ | _____ | Works collaboratively with others within ITS and other university departments to deliver highly reliable network services. Proactively creates and maintains detailed written documentation. Openly shares experience and subject-matter expertise with co-workers through written and oral presentations. Provide timely communications to stakeholders, technical staff, and management as required. |
| _____ | _____ | Collaborates with team members to establish project plans, schedules, and priorities. Participates in the development, implementation, and maintenance of policies, procedures, and associated training plans for network administration, operations, and disaster recovery. Creates custom scripts to improve network efficiency and enhance network automation. |
| _____ | _____ | Engages appropriate customers to resolve network issues. Consults with university departments to determine device suitability and capability for campus network connections, in accordance with approved network and security policies. |
| _____ | _____ | Maintains currency with new and emerging technologies and approaches, leveraging the latest industry knowledge to identify opportunities for innovation and continuous improvement. Pursues information on new network engineering developments, reading journals and other pertinent publications, talking with vendors, and participating in professional organizations, meetings, conferences, seminars and training courses. |
| _____ | _____ | Configures, installs, and maintains network devices. Ensures high network availability, reliability, security, and other performance attributes based on best-in-class service levels. Provides hands-on, proactive and reactive maintenance, and troubleshooting support. Provides subject-matter expertise for Tier 1- and Tier 2-service teams. Executes campus network architecture, design, implementation, and network operations by ensuring alignment with ITS and campus security requirements. Tracks key metrics by configuring and maintaining a proactive Network Monitoring System that leverages existing tools and leading-edge practices. Participates in day-to-day network operations (e.g., upgrading and applying software updates and patches to network devices). |

- _____ _____ Actively participates in the identification of root causes to network issues, recommending or effecting realistic solutions. Analyzes network data and statistics to both proactively and reactively resolve network issues. Collaborates with industry experts and vendors to find and implement effective technology applications. Solves complex, vendor-specific problems, and submits bug reports to vendors.
 - _____ _____ Aids the cultivation of an inclusive environment and a culture of trust and transparency, sharing information broadly, openly, and deliberately. Builds and maintains collaborative relationships with diverse groups of peers, team members, and leadership. Actively embodies ITS values and behaviors (e.g., accountability, ethics, best-in-class customer service).
 - _____ _____ Collaborates with team members and management, implementing effective solutions to support the network engineering team’s vision. Maintains currency with technology, standards, and best practices. Supports process improvement efforts within the team and across the ITS organization.
- Performs other related duties as assigned or requested. The university reserves the right to add or change duties at any time.

***Select E (ESSENTIAL), M (MARGINAL) or NA (NON-APPLICABLE) to denote importance of each job function to position.**

EMERGENCY RESPONSE/RECOVERY:

- Essential: No
- Yes 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.

JOB QUALIFICATIONS:

Minimum Education:

- Bachelor's degree
- Combined experience/education as substitute for minimum education

Minimum Experience:

- 4 years

Minimum Field of Expertise:

Experience with enterprise networking technologies, tools and processes, including routing and switching, L4-7 traffic management (e.g., load balancing), firewalls, data-center fabric, campus networks, VoIP, wireless, network admission control (NAC), virtualization, and hybrid cloud. Proficient with network operating systems including Arista EOS, Cisco IOS/XE/XR, Aruba AOS, and Linux, or similar. Experience with L2 protocols including STP, DHCP, 802.1X, LACP, MLAG, VXLAN bridging, etc. Proficient with addressing mechanisms (DNS, DHCP, IPAM, or similar), and practical experience with L1 technologies (SMF, MMF, DWDM, Transceivers, AOC, Twinax, Fiber fan-outs, or similar). Firm understanding of TACACS/RADIUS, and experience with network traffic analysis for troubleshooting (tcpdump, Wireshark, Netflow/sFlow, iperf, etc.). Exposure to or experience with programming/scripting languages used to automate networks (e.g., Python, Ansible). Experience with L3 protocols and techniques, including MP-BGP, OSPF, VXLAN routing, VRFs, VRRP, and VARP, or similar. Ability to engage with third-party vendors, including

evaluating multiple vendor data products, documenting test plans, assisting in vendor selection, and developing deployment workbooks. Experience with other network protocols and methods, including Traffic Engineering, NAT, TCP/IP, Multicast, and IPv6. Ability to create presentation materials, generate reports, and present them to leadership. Experience with firewall configuration and administration.

Preferred Education:

Bachelor's degree

Preferred Experience:

2 years

Preferred Field of Expertise:

Bachelor's degree in computer science, computer information systems, information technology, or relevant field. CCIE and CCNP certifications. Experience in IT and/or network engineering. Experience with Ethernet VPN (EVPN), in-depth knowledge with SolarWinds Orion (or other NMSs), Fortinet, and ClearPass.

SIGNATURES:

Employee: _____ **Date:** _____

Supervisor: _____ **Date:** _____

The above statements are intended to describe the general nature and level of work being performed. They are not intended to be construed as an exhaustive list of all responsibilities, duties and skills required of personnel so classified.

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