



NETWORK ENGINEER

SALARY GRADE: [C1-72](#)

DEFINITION:

Under the direction of an assigned supervisor, serve as a project leader on network and telecommunications installations or upgrades. Apply advanced skill and knowledge of complex network and telecommunications protocols and knowledge of multiple operating systems in gathering, analyzing, synthesizing, planning and designing unique and original solutions for network and telecommunications systems.

DISTINGUISHING CHARACTERISTICS:

The Network Engineer applies knowledge of complex network protocols and telecommunications; analyzes, plans, develops and designs unique and original solutions for integrating networks and telecommunications systems. The Network Engineer assists in the design and installation of network and telecommunications devices and services; recommends solutions and specifications for acquisitions and evaluates and tests security solutions. The Network Engineer oversees installation projects and serves as project leader.

EXAMPLE OF DUTIES AND RESPONSIBILITIES:

Depending upon assignment, duties may include, but are not limited to, the following:

1. Regularly evaluate new and emerging technology and apply to innovative network solutions in the context of institutional needs.
2. Resolve the most complex network and telecommunications problems; maintain, troubleshoot and diagnose network and telecommunications configurations.
3. Analyze complex network performance reports and recommend appropriate action to enhance service and reliability to the supervisor.
4. Act as technical liaison for network and telecommunications vendors.
5. Install, support, and maintain networks for the District as assigned; monitor equipment functions and usability, review network performance, maintain network systems to maximize availability and accessibility.
6. Research and perform detailed analysis to identify network modifications needed to meet anticipated future requirements.
7. Install, configure and maintain network monitoring and security software.
8. Install, configure and maintain software for routers, bridges, switches and other network devices.
9. Design network configurations that ensure network interoperability between multiple vendors' equipment. Support standard networking protocols and practices.
10. Develop procedures that ensure easy support and maintenance of network infrastructure.
11. Coordinate with outside service organizations regarding network and telecommunications maintenance, operational issues, updates and product capabilities.
12. Research and recommend new network and telecommunication architecture for maximum technical effectiveness.

13. Design, install and maintain both Internet and WAN services.
14. Develop network configurations and run diagnostics to validate performance standards.
15. Prepare written documentation for network design and processes; maintain a database of services provided.
16. Coordinate circuit testing with carriers; analyze and resolve trouble reports.
17. Provide regular reports on the status and performance of PBX, VOIP, voice mail, E911, call routing and other related telecommunications systems.
18. Design, order, inventory, install, program, test and repair equipment hardware and systems associated with network and telecommunications services, including but not limited to routers, bridges, switches, firewalls, controllers, PBX and VoIP systems.
19. Assume a lead role in the installation of network and telecommunications systems.
20. Assist with the development of bid specifications for acquisitions of network and telecommunications equipment and services.
21. Assist in the deployment and monitoring of network and security devices.
22. Perform related duties as assigned.

EMPLOYMENT STANDARDS:

Knowledge of:

1. Advanced knowledge of building communication distribution systems, including conduits, cable trays, and raceways; electrical grounding principles and low voltage communications systems.
2. Telecommunications infrastructure and network installation practices, configuration and installation of network and telecommunication devices.
3. Advanced knowledge and use of complex network and telecommunication principles, hardware, protocols and configurations, TCP/IP, LAN, WAN, Wireless, firewall, and operating systems as they relate to switched and non-switched telecommunications networks.
4. Advanced knowledge of computer and networking principles, switch and router hardware, switch operating systems and network monitoring applications.
5. Working knowledge of client operating systems including but not limited to Microsoft Windows and Macintosh OS.
6. Command of the technical aspects of a networking field of specialty and working knowledge of related specialties.
7. Record-keeping techniques.
8. Oral and written communication skills.
9. Interpersonal skills using tact, patience and courtesy.

Ability to:

1. Demonstrate understanding of, sensitivity to, and respect for the diverse academic, socio-economic, ethnic, religious, and cultural backgrounds, disability, and sexual orientation of community college students, faculty and staff.
2. Apply independent technical judgment to complex technical situations.
3. Coordinate schedules and resources with systems and network programmers, network security engineer, technical services staff, and users.
4. Apply extensive application of knowledge in integrating network protocols to complex solutions and understanding relationships between applications.
5. Operate computers and peripheral equipment properly and efficiently.
6. Diagnose and understand reasons for system failures.

7. Maintain current knowledge of technological advances in the field.
8. Communicate effectively both orally and in writing.
9. Maintain records and prepare reports.
10. Prioritize and schedule work.
11. Analyze situations accurately and adopt an effective course of action.
12. Work independently with little direction and provide work directions to others.
13. Establish and maintain cooperative and effective working relationships with others. Effectively use interpersonal skills with tact, patience, and courtesy.
14. Place and secure network and telecommunications devices into racks and cabinets.

Education and Experience

Any combination equivalent to:

1. Bachelor's degree in computer science or a related field.
2. Five (5) years of experience in computer programming, computer systems and network development responsibilities.

License or Certification

Possession of a valid class C California driver's license.

WORKING CONDITIONS:

Environment:

1. Office environment.
2. May include travel to conduct work.
3. Accessing communications closets and data centers.
4. Indoor and outdoor communications pathways.

Physical Abilities:

1. Hearing and speaking to exchange information in person and/or on the telephone.
2. Dexterity of hands and fingers to operate a computer keyboard and test equipment.
3. Sight to view computer monitor and read various materials.
4. Regularly stand, walk, and sit for extended periods of time.
5. Ability to walk, climb ladders, stoop, kneel, crouch, reach, push, pull, grasp, and perform repetitive motions.
6. Lift moderate to heavy objects up to 60 lbs.

Hazards:

1. Extended viewing of computer monitor.

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