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| **NETWORK SPECIALIST**  |
| **Reports to:**  | Manager, Infrastructure Systems and Applications Development |
| **Dept:** | Academic Information Services | **Range:** | 33 |
| **FLSA:** | Exempt | **EEO:** | Professional/Nonfaculty |

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed by individual positions.*

### BASIC FUNCTION:

Under general direction, perform a wide range of complex network and server administra­tion functions including design, engineering, documentation, deployment, admin­istra­tion, main­tenance and repair of the district’s LAN/WAN, telecommunication net­work infrastruc­ture and various wireless networks. Incumbents work closely with System Administrators to maintain network security and integrity that ensures secure wired and wireless access to staff, students and district guests; and perform related duties as assigned.

### DISTINGUISHING CHARACTERISTICS*:*

A Network Specialist is distinguished from a Systems Administrator in that an incumbent in the latter class is responsible for the design, configuration, testing, deployment and mainten­ance of physical and virtual network and systems infrastructure, while a Network Specialist focuses on LAN/WAN, wireless and telecommunications systems.

### ESSENTIAL DUTIES & RESPONSIBILITIES:

*The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this class.*

1. Engineer, plan, install, program, troubleshoot and maintain Local Area Network (LAN) and Wide Area Network (WAN) hardware, including wiring components, servers, switches, hubs, bridges, wireless access points, routers and gateways, as well as external network connec­tivity and security devices; plan server hardware upgrades; maintain records of work and documentation of configurations; administer user accounts, user profiles and user/group access and rights; work with other AIS staff and vendors to resolve hardware issues.
2. Manage assigned firewalls including installation and configuration; monitor networks to ensure security and availability; perform maintenance, backups and verification of all firewall updates and changes; define access requirements and structure at the network interface and network segment level; acquire and track approvals of network rules and service changes; track internet traffic; report unauthorized access following established procedures.
3. Engineer, design, install, monitor and support data center routers, switches, gateways and related equipment; design, install, monitor and support data center physical and virtual servers and support applications; participate in or perform the selection, development and implementation of backup and recovery solutions.
4. Install, monitor, maintain and troubleshoot campus routers and building switches including related programming and configuration; install software maintenance and security-related upgrades; monitor and maintain related power conditioning systems and UPS units.
5. Manage and maintain Router Access Lists (ACL) security on all campuses, student labs and wireless networks; assign routing protocols and routing table configuration; assign configur­ation of authentication and authorization of directory services.
6. Serve as telecommunications architect; design, engineer, monitor, install, upgrade, migrate and support voice servers for the district; manage end devices and analog line services; work with phone vendors, partners, solution integrators and providers; manage voice proto­cols, voice licensing and device pools.
7. Manage the structure and design of the district’s wireless services; build, monitor and main­tain wireless networks, access points, switches and routers; ensure the separation and security of all wireless networks including those for students, labs, guests and staff; create guest log­ons for public-facing events; install and configure access points as needed.
8. Maintain overall integrity of the network, server deployment and security; analyze network resource utilization and implement solutions to correct problems to ensure all network appli­cations are accessible and functioning properly; identify and recommend appropriate changes to the network infrastructure to improve performance, reliability and availability; devel­op and recommend procedures for network management, including resource allocation of centralized, decentralized and remote network services.
9. Oversee and install, upgrade, repair and terminate fiber and copper physical cables for data and analog networks; work with vendors and manage onsite contractors.
10. Identify and resolve complex network problems using advanced network management tools.
11. Complete clear, concise and accurate system documentation following established proce­dures.
12. Provide on-call support for production servers, network systems and computing infrastruc­ture as assigned.
13. Provide backup support to other members of the infrastructure systems and technical support teams.

### OTHER DUTIES:

1. Monitor trends and developments in systems, networking and multi-platform communica­tion technologies; consult with vendors and other sources on industry and product direc­tion, functionality and capabilities.
2. Attend various meetings and participate on committees as required.
3. Perform asset management functions including asset tracking, equipment disposal and warehouse management.
4. Provide basic training to other district staff on network/telecommunication structure, equip­ment operations and protocols in solving simple network-based problems.
5. May conduct analyses in support of data center planning.
6. Perform related duties as assigned.

### KNOWLEDGE AND ABILITIES:

### KNOWLEDGE OF:

1. Wired and wireless network architectures; theory and principles of network design and integration, including topologies, protocols and network load distribution.
2. Principles, methods and techniques of layout, installation, configuration, integration and operation of network systems, components, equipment and devices.
3. Principles, methods and techniques for installing, configuring, integrating and operating storage area network systems, components, equipment, devices and software.
4. Server hardware and operating system architecture, directory services, characteristics, commands and components applicable to district servers and computer platforms.
5. Advanced network management software, equipment, tools and utilities.
6. Advanced methods and techniques for performing connectivity testing and network analyses and troubleshooting.
7. Advanced principles, practices and methods of network administration and maintenance, including configuration, performance tuning and diagnostic tools.
8. Wired and wireless network security principles, equipment, software, practices, techniques and tools, including encryption standards and authentication methods.
9. Principles, practices and methods of systems administration and maintenance.
10. Disaster planning and recovery techniques.
11. Database management systems and software.
12. Standard programming and scripting languages and utilities applicable to responsibilities.
13. Safety policies and safe work practices applicable to the work.
14. Written and oral communication skills including correct English usage, grammar, spelling, punctuation and vocabulary.

### ABILITY TO:

1. Design, configure, manage and maintain the operations of complex wired and wireless network systems to achieve optimal technical performance and user support.
2. Troubleshoot complex network hardware, software and/or connectivity problems and make modifications and fixes to resolve problems.
3. Develop conceptual frameworks and apply state-of-the-art technology to the design and management of operating system and network infrastructures.
4. Perform business and functional analyses and reach sound conclusions regarding customer needs and requirements.
5. Understand and apply the analysis of functional requirements to the development of pro­posals, specifications and recommendations for efficient, cost-effective network systems and technology solutions.
6. Assess customer needs, set priorities and allocate resources to most effectively meet needs in a timely manner.
7. Use hand and power tools and operate electronic test equipment.
8. Lift and carry equipment and supplies for short distances.
9. Prepare clear, concise and accurate system documentation, reports of work performed and other written materials.
10. Make sound, expert, independent decisions within established guidelines.
11. Communicate clearly and effectively orally and in writing.
12. Work collaboratively and effectively as a team member.
13. Operate a computer and standard business software.
14. Demonstrate sensitivity to and understanding of diverse academic, socioeconomic, cultural, ethnic and disability issues.
15. Establish and maintain effective working relationships with all those encountered in the course of work.

### EDUCATION AND EXPERIENCE:

Graduation from an accredited four-year college or university with a bachelor’s degree in information systems, computer science or a related field; and at least three years of pro­gressively responsible experience in the analysis, design, installation and administration of network infrastructures; or an equivalent combination of training and experience.

### LICENSES AND OTHER REQUIREMENTS:

A valid California driver’s license and the ability to maintain insurability under the district’s vehicle insurance program.

**WORK DIRECTION, LEAD AND SUPERVISORY RESPONSIBILITIES:**

Project team leadership and contractors.

**CONTACTS:**

AIS staff, Business Systems Analysts, faculty, administrators, staff, students, contractors, community agencies, vendors and the public.

**PHYSICAL EFFORT:**

*The physical efforts described here are representative of those that must be met by employees to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

Primarily sedentary with intermittent standing, walking, bending and stooping; occasional work on ladders and in confined spaces; light lifting and carrying of objects weighing up to 25 pounds and occasional lifting of objects over 50 pounds; ability to travel to a variety of locations on and off campus as needed to conduct district business.

**EMOTIONAL EFFORT:**

Ability to develop and maintain effective working relationships involving interactions and com­munications personally, by phone and in writing with a variety of individuals and/or groups from diverse backgrounds on a regular, ongoing basis; ability to work effectively under pressure on a variety of tasks concurrently while meeting established deadlines and changing priorities.

**WORKING CONDITIONS:**

Primarily business office environment; subject to frequent interruptions by individuals in person or by telephone; intermittent exposure to individuals acting in a disagreeable fashion; may work at any district location or authorized facility with occasional evenings and/or weekends on an as-needed basis. Occasionally work is performed in confined spaces, on roofs or in attics; may be exposed to outdoor weather conditions and the risk of electrical shock. Some work involves climbing ladders and working in high, precarious places. Occasional local travel may be requested.