SAN MATEO COUNTY OFFICE OF EDUCATION

CLASS TITLE: NETWORK ENGINEER

BASIC FUNCTION:

Under the direction of the Manager, Network Services, perform a variety of highly complex and specialized activities involved in the planning, design, set-up, installation, configuration, operation, development, modification, maintenance and repair of County Office and school district Local Area Network (LAN), Wide Area Network (WAN), intranet, internet and other network systems and related servers, equipment, hardware, software and applications; administer, analyze and assure proper use, connectivity, security and operation of County Office network systems.

REPRESENTATIVE DUTIES:

ESSENTIAL DUTIES:
Perform a variety of highly complex and specialized activities involved in the planning, design, set-up, installation, configuration, operation, development, modification, maintenance and repair of County Office and school district LAN, WAN, intranet, internet and other network systems and related servers, equipment, hardware, software and applications; establish and maintain related time lines and priorities.

Install, configure and assure smooth and efficient operation of network hardware, cabling, servers, hubs, routers, switches, firewalls, cabling infrastructures, modems, printers and other network components, equipment and devices; replace cabling, equipment and devices as needed; coordinate and assure proper interoperability, connectivity and adaptability between network systems; coordinate circuit installations and network cutovers.

Analyze network needs and develop and implement network plans, projects and specifications; prepare and develop maps, diagrams, drawings, spreadsheets and other documents; estimate equipment, material, hardware, hardware, time and cost requirements for network projects; contact vendors and contractors to request pricing and product information.

Perform a variety of network administration activities including establishing and maintaining user accounts, IP addresses, subnets, supernets, domains, passwords, e-mail accounts, internet connectivity, firewalls and designated programs and systems; assure proper installation of server and work station software and operating systems and test applications to assure proper operation.

Monitor and analyze network performance to assure smooth and efficient operation and identify problems, concerns and security issues; monitor, control and assure proper network usage, security, traffic, operations, resources allocation, bandwidth and connectivity; monitor, analyze and modify systems to meet County Office, remote and dial-up user needs.

Provide for the effective and efficient storage, retrieval, customization and archiving of data on servers; troubleshoot and resolve network and server-related database problems and malfunctions; assure data integrity; prepare, maintain and replace back-up data files; monitor available system disk space; move, compress and delete files to provide for program running as needed.

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Inspect, troubleshoot and diagnose network system, server, hardware and application malfunctions to assure smooth running of network systems; resolve connectivity and other network problems and malfunctions; administer, configure, monitor and maintain network system servers and security; update servers with security patches and anti-virus software as needed.

Prepare user stations and computer equipment for staff use; install and configure software and hardware and observe elements of the computer for evidence of incorrect performance; connect work stations to network server and assure proper operation; troubleshoot, diagnose and repair computer workstations and related hardware and software as needed.

Compile and analyze a variety of information and data related to network system use; utilize related technology tools; prepare and maintain a variety of records, reports and files related to network utilization, traffic patterns, connectivity, passwords, data ports, IP's, hardware and software configurations, technical support, vendors, back-ups and assigned activities.

Install server and work station software; test applications to assure proper operation; configure hardware and software to assure network access and smooth system operations; troubleshoot and resolve operating system malfunctions; obtain and install software updates and upgrades as needed.

Provide technical assistance and user support to County Office personnel, school districts, outside agencies and others concerning networks; respond to inquiries and provide detailed and technical information concerning network design, equipment, hardware, software, security, connectivity, configuration, malfunctions, applications, practices, techniques and procedures.

Serve as a liaison and coordinate network-related projects, communications and information between the County Office, local school districts, vendors, consultants and various outside agencies; resolve related issues and conflicts in a proper and timely manner.

Communicate with personnel, administrators and various outside agencies to exchange information and coordinate activities; contact and collaborate with vendors in resolving network problems, issues and malfunctions.

Train and provide work direction and guidance to assigned personnel; coordinate network projects and review completed projects for accuracy, completeness and compliance with established standards, requirements and procedures.

Operate a variety of computers, servers, peripherals, testers, meters, analyzers, tone generators, specialized software and hand tools; drive a vehicle to conduct work.

Research and evaluate new technologies for possible implementation; confer with users concerning system needs; provide recommendations for and assist in coordinating the purchase and implementation of new technologies including network hardware and software.

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OTHER DUTIES:
Perform related duties as assigned.

KNOWLEDGE AND ABILITIES:

KNOWLEDGE OF:
Practices, procedures and techniques involved in the planning, design, installation, configuration, operation, development, modification, maintenance and repair of LAN, WAN, intranet, internet and other network systems and related servers, equipment, hardware, software and applications.
Principles, methods and procedures of operating computers, networks and peripheral equipment.
System utilities and design and program applications.
Networking standards, requirements, layout and infrastructure related to educational organizations.
Materials, methods and tools used in the operation, installation and repair of computer and network systems.
WAN and LAN usage, implementation and network terminology.
Advanced principles, theories and techniques of network design.
Applicable types of cabling systems, servers, hubs, routers and other related equipment.
Installation, maintenance and repair of computer hardware, software and peripheral equipment.
Principles and techniques of systems and network analysis.
Computer operating systems and software applications utilized by the County Office.
Record-keeping and report preparation techniques.
Interpersonal skills using tact, patience and courtesy.
Oral and written communication skills.
Technical aspects of field of specialty.

ABILITY TO:
Perform a variety of highly complex and specialized activities involved in the planning, design, set-up, installation, configuration, operation, development, modification, maintenance and repair of County Office and school district LAN, WAN, intranet, internet and other network systems and related servers, equipment, hardware, software and applications.
Analyze network needs and develop and implement network plans, projects and specifications.
Monitor, control and assure proper network usage, security, traffic, operations, resources allocation, bandwidth and connectivity.
Administer, evaluate and modify network systems to assure proper security and operation.
Troubleshoot, diagnose and resolve problems with network servers, hardware and software.
Install and assure proper operation of server and work station software and updates.
Perform a variety of network administration activities including establishing and maintaining user accounts, passwords, server and system back-ups, e-mail accounts and internet connectivity.
Repair and replace hardware as needed.
Administer, monitor and maintain network system security, servers and databases.
Provide for effective and efficient storage, retrieval, customization and archiving of data.
Configure network and user station settings to assure optimal utilization of system resources.
Install and configure network hardware, cabling and related equipment.
Plan and organize work.
Meet schedules and time lines.
Work independently with little direction.

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Maintain records and prepare reports.
Communicate effectively both orally and in writing.
Establish and maintain cooperative and effective working relationships with others.

EDUCATION AND EXPERIENCE:

Any combination equivalent to: bachelor's degree in computer science or related field and four years increasingly responsible experience involving network planning, design, set-up, installation, development, modification, maintenance and repair.

LICENSES AND OTHER REQUIREMENTS:

Valid California driver's license.

WORKING CONDITIONS:

ENVIRONMENT:
Indoor work environment.
Driving a vehicle to conduct work.

PHYSICAL DEMANDS:
Dexterity of hands and fingers to operate a computer keyboard.
Hearing and speaking to exchange information.
Seeing to read a variety of materials and view a computer monitor.
Sitting or standing for extended periods of time.
Lifting, carrying, pushing or pulling moderately heavy objects as assigned by the position.
Bending at the waist, kneeling or crouching.
Reaching overhead, above the shoulders and horizontally.
Climbing ladders and working from heights.

HAZARDS:
Working on ladders.

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