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FLSA: NON-EXEMPT
Bargaining Unit: PL
JCN: 3142

County of El Dorado

February 2009

SR:
INFORMATION TECHNOLOGY ANALYST III –
Networking
NETWORK DESIGN AND ADMINISTRATION

DEFINITION

Under general supervision, direction, provides lead direction, training, and performs the more difficult, complex advanced and specialized professional, technical and analytical duties including: network and information security management of a professional nature in the design, engineering, enhancement, administration, maintenance, design and engineering; analysis of and maintenance of County information technology networks and related systems, including network hardware and related applications; leads and coordinates complex network development projects and analyzes complex customer and enterprise infrastructure –network and information security requirements; development, implementation, and maintenance of complex networks and/or information security systems; requirements; designs, engineers, and maintains the most complex department and enterprise infrastructure network architectures; and performs related duties as assigned.

SUPERVISION RECEIVED AND EXERCISED

Receives general direction from assigned supervisory or management personnel. Exercises technical and functional direction over and provides training to technical, paraprofessional, and professional staff.

CLASS CHARACTERISTICS

This is the advanced/lead-level classification in the Information Technology Analyst – Network Design and Administration class series. Incumbents in this class are responsible for performing the most difficult, complex, and/or sensitive duties related to network development and administration which include acting in an advisory role to technical and analytical staff and providing strategic input within this area of specialization. Incumbents may also coordinate, direct, and review complex projects that are large in size and scope, requiring coordination of multiple staff and the procurement/utilization of significant resources. Incumbents also provide technical and functional leadership over other staff on both projects and on day-to-day assignments as assigned. Performance of the work of other professional and support IT staff but is not considered a supervisory class. requires the use independence, initiative, and discretion within established guidelines.

DISTINGUISHING CHARACTERISTICS

This class is an advanced specialist level in the Information Technology Analyst – Networking series. Positions at this level are distinguished from the Information Technology Analyst I/II – Networking in that it requires a greater level of professional expertise in a specialized area of information technologies. Incumbents are expected to independently perform a full range of complex and difficult Information Technology Analyst duties at an advanced level. Successful performance requires thorough knowledge of and demonstrated proficiency in the networking and information security management technologies. The incumbent should exercise initiative and sound independent judgment within established guidelines. This class may provide lead direction or limited supervision to professional and support staff, but is distinguished from Supervising Information Technology Analyst in that the latter is the first full supervisory level in the Information Technology Analyst series.

EXAMPLES OF DUTIES (Illustrative Only)

This class is distinguished from the Information Technology Supervisor in that the latter performs full supervisory responsibilities.

EXAMPLES OF TYPICAL JOB FUNCTIONS (Illustrative Only)

- Performs advanced and complex analytical duties of a professional nature in the design, engineering, enhancement, administration, and maintenance of County information technology networks and related systems, including network hardware and related applications.
- Serves as a technical expert within area of assignment, providing guidance and direction to technical, paraprofessional, and professional staff and resolving the most complex problems; participates in the development of strategic plans for network development and modification as assigned.
- Provides ~~lead direction, training, work~~ and mentoring to assigned staff; trains staff on server related duties, methods, and procedures.
- Leads and coordinates complex network development projects or project elements; participates in project strategic planning activities; plans, coordinates, and oversees project team activities; identifies deliverables and establishes schedules and timelines; identifies and allocates project resources; provides data for justification of unit budget in relation to assigned projects; maintains documentation version control; coordinates the delivery of final deliverables for review and evaluation to a small staff; organizes and assigns work, sets priorities and follows up to ensure coordination and completion of assigned work approval.
- Provides ~~May provide~~ input into selection decisions, performance evaluations, and disciplinary matters-related to assigned project teams.
- Counsels staff; recommend appropriate discipline and other personnel actions.
- Plans, determines requirements, designs ~~Works~~ with colleagues and clients to identify the business process basis for network enhancements and development; oversees the development of work flow diagrams to reflect current and proposed flow of data and information; coordinates the development of initial and ongoing network design models and specifications to optimize work flows and process efficiencies.
- Leads and coordinates the design and development of new or enhanced network architectures; identifies system requirements; researches and analyzes the feasibility of hardware and software solutions; recommends the appropriate uses of department or enterprise network infrastructure technology.
- Designs, builds, tests, implements, maintains, and enhances ~~the most complex and specialized department or enterprise network and information infrastructure systems over multiple platforms and technologies, ensuring that the design incorporates comprehensive security systems measures.~~
- Analyzes, designs, tests ~~Oversees the configuration, implementation, and implements assigned complex projects which may require~~ troubleshooting of network components and security software, and ensures the coordination ~~and~~ collaboration with counterparts in other IT classifications and multiple other information technology staff in the integration of network projects with other systems.
- Determines network needs and develops plans and proposals to meet the needs of customers.
- Researches to determine feasibility, and advises and recommends appropriate uses of network and/or security technologies.
- Integrates complex or specialized network and/or information security system technologies.
- Models changes against hardware and software configurations to optimize the utilization of resources.
- Acts as a liaison between vendors, ~~IT staff~~ technical support, and ~~system users~~ departments to resolve enterprise system, network ~~and/~~ or information security ~~telecommunication~~ problems; designs, coordinates and implements corrective measures.
- Designs and models enhancements and other modifications against enterprise network and/or information security hardware/software configurations to optimize the utilization of resources.
- Determines needs, develops plans and implements solutions to meet the network and/or information security needs of the enterprise.
- Researches to determine feasibility, advises and recommends appropriate uses of enterprise network and/or information security system technology.
- Designs, develops ~~Develops~~ and implements comprehensive test plans to ensure that enterprise network and/or information security technology components ~~and changes thereto~~ are tested and debugged ~~prior to~~

implementation.

- > ~~Resolves complex technical network problems; provides training and assistance to County staff.~~
- > ~~Monitors and enforces security policies and procedures.~~
 - > ~~Installs third-party enterprise infrastructure network and/or information security system software/hardware/appliances; modifies software as necessary to meet specific enterprise customer requirements; installs vendor supplied maintenance and enhancements.~~
 - ~~Determines and gives direction to staff on proper installation parameters for enterprise infrastructure network and/or information security system software/hardware for smooth integration, transition and efficiency.~~
 - > ~~Resolves problems related to network application software, operating system, hardware, router and switches, printing, and networks.~~
 - > ~~Provides training for County staff as assigned.~~
 - ~~Monitors and collects data on enterprise infrastructure network and/or information security system performance and proposes necessary modifications.~~
 - > ~~Determines and adjusts department and/or enterprise infrastructure network and/or information security system performance.~~
 - > ~~Determines and adjusts network performance thresholds for system resources.~~
 - ~~Participates in and/or directs projects.~~
 - ~~Attendance and punctuality that is observant of scheduled hours on a regular basis.~~
 - > ~~Performs related workduties as assigned.~~

QUALIFICATIONS

General Knowledge of:

- ~~Advanced principles of enterprise infrastructure and techniques of network topologies and architectures.~~
- > ~~Principles of computer information security and privacy practices, methodologies.~~
- ~~Design, installation and maintenance of enterprise infrastructure network and/or information security systems.~~
- ~~Advanced knowledge of network/server/desktop operating systems.~~
- > ~~Voice over Internet Protocol (VoIP) principles and practices related to installing, configuring, modifying, and maintaining network operating systems, network and security applications, and remote access appliances and/or software.~~
- > ~~Advanced logical and physical network design, implementation, testing, and maintenance.~~
- > ~~Advanced data communication and network concepts and principles.~~
- > ~~Principles and practices of project management and work flow analysis.~~
- > ~~Principles of providing functional direction and training.~~
- > ~~Principles and practices of leadership.~~
- > ~~Planning and implementation of network hardware/software installation/upgrades.~~
- > ~~Networking services such as NT, RADIUS, TACACS, DNS, and DHCP, and protocols such as RIP, OSPF, EIGRP, and BGP.~~
- > ~~Internet and intranet architecture and vendor offerings.~~
- > ~~Network security policies, techniques, and procedures.~~
- > ~~Network and/or security documentation, configuration, maintenance, and diagnostic procedures and techniques.~~
- > ~~Network, server, LAN/WAN, router and switch configuration and administration.~~
- > ~~Use of network diagnostic systems and tools.~~
- > ~~Methods and techniques of designing and coordinating information technology testing processes.~~
- > ~~Network forensics tools and techniques.~~
- > ~~Development of utility programs to enhance network performance.~~
- > ~~Principles and practices of technical problem solving.~~
- > ~~Principles, processes, and techniques of technology project management.~~

- Methods of long-term technology assessment and deployment.
- Principles, Industry best practices of information technology management and control.
- Restart and recovery concepts.
- Methods and techniques of providing customer service, conducting research.
- Principles and techniques for working with groups and fostering effective team interaction to ensure teamwork is conducted smoothly.
- Principles and practices of producing effective project and technical documentation.
- ~~➤ Restart and recovery concepts.~~
- ~~○ Basic supervisory practices and principles.~~
- ~~○ Team dynamics and team building.~~
- ~~○ Principles, processes, and techniques of project management and related software.~~
- ~~○ Methods of long-term technology assessment and deployment.~~
- ~~○ Current trends and technological advancements.~~

Specific Knowledge:

- Superior knowledge in logical and physical Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and County staff.
- The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Modern equipment and communication tools used for business functions and program, project, and task coordination.
- Computers and software programs (e.g., Microsoft software packages) to conduct, compile, and/or generate documentation.

Ability to

- Plan, organize, and coordinate the work of technical, paraprofessional, and professional staff.
- Provide staff leadership and work direction.
- Train others in proper and safe work procedures.
- Provide advanced, professional support to a diverse range of enterprise-wide and department-specific networks used throughout the County.
- Identify complex technology solutions for business process improvements and efficiencies.
- Recognize complex network problems, develop recommendations and solutions, and manage corrections.
- ~~➤ Understand complex enterprise infrastructure network and/or information security systems design, implementation, testing and maintenance, and issues.~~
- ~~➤ Enterprise infrastructure network Integrate department and/or information enterprise networked and/or security systems software/hardware vendors, products and pricing structures.~~
- ~~○ Complex data communication and Enforce network concepts and principles.~~
- ~~○ Sophisticated Internet and Intranet architecture and vendor offerings.~~
- ~~○ Network security policies, techniques and procedures.~~
- ~~➤ Network and/or information security system documentation, configuration, maintenance and diagnostic procedures and techniques.~~
- ~~○ Advanced knowledge of network and/or information security system diagnostic tools.~~
- ~~○ Highly advanced knowledge of various networking services and protocols such as DNS, DHCP, WINS, etc~~
- ~~○ Advanced knowledge of IP addressing, routing and switching principles and protocols.~~
- ~~○ Advanced knowledge and understanding of remote access methodologies and enterprise network protection appliances and/or software.~~
- ~~○ Hacker tools, techniques, exploit methods.~~
- ~~○ Information security incident response and analysis of computer intrusions or data breaches.~~
- Highly knowledgeable Develop and implement network testing models.
- Evaluate, install, test, and implement new network architectures.
- Coordinate activities with vendors, clients, and staff.

- ~~Collaborate with colleagues~~ in the OSI Reference Model.

Skill In:

- ~~Recognizing complex enterprise infrastructure network and/or information security system problems,~~ developing **recommendations** and **solutions** ~~documenting process work flows, specifications, and managing corrections.~~ models.
- ~~Understanding complex and specialized enterprise infrastructure network and/or information security systems and issues.~~
- ~~Integrating enterprise infrastructure network and information security systems.~~
- ~~Analyzing and critiquing sophisticated enterprise infrastructure network connectivity related issues during installations and/or upgrades.~~
- ~~Developing detailed enterprise information security designs integrating firewalls, Intrusion Prevention Systems (IPS), secure access control systems and other intricate security software and hardware.~~
- ~~Performing enterprise infrastructure network and information security forensics.~~
- ~~Making~~ **Make** technical oral presentations to technical and non-technical audiences.
- ~~Coordinating activities with vendors, clients and staff.~~
- ~~Interpreting, applying rules and explaining policies and procedures.~~
- ~~Using~~ **Use** sound independent judgment within established guidelines.
- ~~Preparing~~ **Prepare** clear and concise reports, correspondence, documentation, and other written ~~materials~~ material.
- ~~Communicating effectively,~~ Communicate clearly and concisely, both orally and in writing, **with Information Technologies management, professional and support staff, system users and vendors.** ~~using appropriate English grammar and syntax.~~
- ~~Establishing and maintaining~~ Understand, interpret, and apply all pertinent laws, codes, regulations, policies and procedures, and standards relevant to work performed.
- ~~Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.~~
- ~~Establish, maintain, and foster positive and~~ effective working relationships with those contacted in the course of ~~the~~ **work.**
- ~~Planning, organizing, coordinating, and directing the work of assigned staff.~~
- ~~Promoting and maintaining a team environment.~~

Special Requirements:

~~May be required to work on-call, weekends and irregular hours. Applicants must pass a criminal history and background check which may include contact of prior employers and personal references, and fingerprinting for purposes of searching local, state and national fingerprint files through the Department of Justice and Federal Bureau of Investigation to disclose any criminal record.~~

Education and Experience:

~~Any combination of the required experience, education, and training that would provide the essential knowledge, skills, and abilities is qualifying.~~

Equivalent to a bachelor's

~~**EITHER** (1) A Bachelor's degree from an accredited four-year college or university with major coursework in Computer Science, MIS, Business Administration information technology, computer science, or a closely-related field; possession of one or more approved nationally recognized industry specific technology certifications may be substituted for some or all of the education; and~~

EITHER ~~with an emphasis in network and/or information security management,~~

~~Four (4) years of professional experience providing analytical support related to the development and administration, maintenance, design and engineering, OR, Two years, (60+ semester units or 90+ quarter units), of college-level coursework in Computer Science, MIS, Business Administration of enterprise or a closely related field with an emphasis in network and/or customized information security management, administration, maintenance, design and engineering, AND two years of professional level experience working in network and/or information security management, administration, maintenance, design and engineering, technology networks;~~

~~AND~~

~~Five years experience working in network and/or information security management, administration, maintenance, design and engineering. At least two years of experience must have been in a multi-platform information systems environment.~~

~~OR~~

~~Two (2)Two years of professional experience at a level equivalent to the County's class of Information Technology Analyst II-Networking- – Network Design and Administration.~~

~~NOTE: The above qualifications are a typically accepted way of obtaining the required knowledge and skills.~~

Licenses and Certifications:

~~➤ Possession of, or ability to obtain and maintain, a valid California Driver's License by time of appointment and a satisfactory driving record.~~

PHYSICAL DEMANDS

~~Must possess mobility to work in an office setting; use standard office equipment, including a computer; some positions may be required to operate a motor vehicle; vision to read printed materials and a computer screen; and hearing and speech to communicate in person and over the telephone. Standing in and walking between work areas is frequently required. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification frequently bend, stoop, kneel, and reach to perform assigned duties, as well as push and pull drawers open and closed to retrieve and file information. Employees must possess the ability to lift, carry, push, and pull materials and objects up to 25 pounds. Reasonable accommodations will be made for individuals on a case-by-case basis.~~

ENVIRONMENTAL CONDITIONS

~~Employees work in an office environment with loud to moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.~~

WORKING CONDITIONS

~~Must be willing to work after hours, weekends, and holidays as needed. Must be able to pass a thorough background investigation.~~