INFORMATION TECHNOLOGY NETWORK ENGINEER I (7961)
INFORMATION TECHNOLOGY NETWORK ENGINEER II (7962)

DEFINITION

Performs professional duties pertaining to the analysis, development, maintenance and administration of computer networks to meet business needs; implements network configurations; analyzes network systems/structures for stable and reliable connectivity; monitors network traffic, performance and security; investigates, analyzes and resolves network-related problems; recommends network changes to enhance services; provides professional support on network-related projects that are small or medium in size and scope and require limited staff and resources; performs other related duties as assigned.

IT Network Engineer I/II positions may be assigned to independently administer a Local Area Network (LAN) infrastructure or may provide support for a Wide Area Network (WAN). In general, the duties assigned to an IT Network Engineer I/II emphasize network administration, maintenance and problem analysis/resolution. Incumbents may also maintain and administer network components such as network appliances and peripheral equipment and may provide professional support for network development projects.

CLASS CHARACTERISTICS

IT Network Engineer I - This is the entry-level class in the professional IT Network Engineering series. Positions in this class are distinguished from IT Network Engineer II by the performance of less than the full range of duties assigned to the Network Engineer II level. Incumbents work initially under general supervision while learning job tasks, progressing to reduced direction as the procedures and processes of the assigned areas of responsibilities are learned.

IT Network Engineer II - This is the journey-level class in the IT Network Engineer series. Positions in this class are distinguished from IT Network Engineer I by the performance of the full range of duties, which may include serving as a project lead over routine technology projects. Incumbents receive occasional supervision while working toward a definite objective that requires use of a wide range of procedures and involves planning and/or determining specific procedures or equipment required in order to meet assigned objectives and solve routine problems. Incumbents in this class may perform lead duties.

This class is distinguished from the class of Senior IT Network Engineer because incumbents in that class may perform supervisory and/or advanced professional duties that include coordinating, administering or managing network and platform projects that are large in size and scope, requiring the support of multiple staff and the procurement/utilization of significant resources.

EXAMPLES OF DUTIES

Both Class Levels:

1. Analyzes, develops, maintains and administers network infrastructures and systems; plans, determines and implements network hardware/software configurations including VOIP, wireless equipment, hubs, switches, routers, cabling.

2. Plans and implements network upgrades; tests hardware and software to ensure optimal functionality.

3. Monitors network and server traffic, performance and security using a variety of evaluation tools; analyzes traffic patterns; checks network logs to detect intruders; writes scripts to support network monitoring and network administration tasks.

4. Identifies and resolves network security issues; provides recommendations to improve network performance and security.

5. Researches and responds to customer complaints regarding network functionality; investigates, analyzes and resolves a wide variety of network-related problems; troubleshoots network failures and telecommunication problems and re-establishes connectivity to ensure business continuity.

6. Helps implement security for web browsing, sensitive data access, and password issues; performs and/or coordinates activities pertaining to business continuity and disaster recovery; performs critical network configuration backup, network database backup, and network recovery; stays up to date on security issues such as threats, vulnerabilities, technology and vendors.

7. Assists with network design, development and maintenance projects by researching resources, timelines and other issues; analyzes potential issues pertaining to geographic location, capacity, technology/knowledge resources, and interface requirements for connectivity with other systems; plans and coordinates work in conjunction with other teams that may be affected; executes project implementations.

8. Coordinates assigned network activities with vendors; maintains effective communications with users regarding vendor activities, problems, status, timelines and other details.

9. Prepares reports, correspondence and other documents; participates on committees and task forces; attends meetings, conferences and training sessions.

10. Prepares technical documentation and procedural manuals including detailed project plans, network diagrams, circuit schematics and user training materials.

11. Performs other related duties as assigned.

<u>IT Network Engineer II</u>

In addition to the duties listed above:

1. Works on network projects of greater size and complexity.

2. May provide more advanced professional support for network-related projects that are medium in size and scope. Helps develop and monitor project budgets and resources; assists in monitoring vendor performance to ensure compliance with County standards and specifications; interfaces with clients to define project scope and review project activities, recommendations and outcomes; coordinates the use of project resources based on project specifications; designs and implements project testing and quality assurance processes.

MINIMUM QUALIFICATIONS

<u>Knowledge Of:</u>

- Information technology operating systems and hardware and software components similar to those being used by the hiring department.

- Principles, practices, standards, terminology, protocols, and trends in network engineering and administration within large complex organizations.

- Logical and physical network system designs including network layer standards and how they work together.

- Network hardware and software such as routers, LAN and WAN switches, cabling and testing equipment.

- Network routing and switch languages and protocols pertaining to TCP/IP, Ethernet, VLAN, VOIP, and other industry standard network technologies.

- Technologies pertaining to various types of network cabling (e.g., fiber and Ethernet), network circuits, and other connectivity solutions.

- Network hardware and software security.

- Principles of network administration.

- Internet service infrastructure and data circuits; Internet and Intranet architectures.

- Networking protocols, documentation, configuration, maintenance and diagnostic procedures/techniques; standard network security policies, techniques and procedures.

- Telecommunication concepts, principles, protocols, equipment, devices and operational characteristics.

- Principles and practices of computer hardware and software testing and troubleshooting.

- Principles and practices of customer service in an information technology environment.

- Basic project management principles and techniques such as organizing and managing a project, developing schedules, identifying critical paths, and breaking down a project into individual tasks.

- Methods and techniques of developing and presenting technical documentation and training materials.

Ability to:

- Analyze, develop, maintain and administer network-related systems, equipment and software similar to that being used by the hiring department.

- Configure, test, maintain, troubleshoot, and repair complex data, voice and video network equipment.

- Troubleshoot a variety of technical network systems hardware and software problems, identify and recommend alternative technical solutions, and respond appropriately to customer service requests.

- Plan and evaluate new systems and equipment.

- Plan, organize, prioritize and process work to ensure that deadlines are met.

- Learn and utilize specialized terminology if needed by the specific assignment.

- Read, understand and apply technical information pertaining to computer and network systems.

- Adapt quickly to changes in policies, procedures, assignments and work locations.

- Communicate effectively both in orally and in writing for technical and non-technical audiences.

- Establish and maintain effective working relationships with those encountered during the course of the work.

IT Network Engineer I

Experience: Two years of directly related experience that demonstrates the competencies and attributes listed above; OR

Education: Possession of a bachelor's degree from an accredited college or university with major coursework in computer science, information systems or a closely related field that has provided the candidate with a sound conceptual understanding of information technology concepts.

Special Requirement: Depending upon assignment, demonstrated professional level competency and/or certification pertaining to the information technologies used by the County may be required.

IT Network Engineer II

Experience: Two years of experience that is comparable to a County of Orange IT Network Engineer I

Education: College level education or training directly related to the competencies and attributes required of the position may be substituted for up to one year of the required experience at the rate of three semester units or the equivalent, equaling one month of experience and one hour of training equaling one hour of experience. College level education or training beyond a bachelor's degree, which is directly related to the competencies and attributes required of the position, may be substituted for up to an additional year of required experience at the same rate identified above.

Special Requirement: Depending upon assignment, demonstrated professional level competency and/or certification pertaining to the information technologies used by the County may be required.

ADDITIONAL REQUIREMENTS

Depending upon assignment, some positions in this class may require possession of a valid California driver's license, Class C or higher.

PHYSICAL AND MENTAL REQUIREMENTS

Frequent standing or sitting for extended periods; frequent walking; occasional driving may be required, depending upon assignment; occasional pushing/pulling; occasional bending, kneeling, squatting and crawling; occasional lifting up to 25 pounds; infrequent lifting up to 50 pounds; constant use of good overall vision for reading/close up work; infrequent use of color perception and occasional use of eye/hand coordination; frequent repetitive motion from writing and using a computer keyboard; occasional grasping, holding and reaching; frequent hearing/talking to others on the telephone and in person; frequent decision making and concentration; occasional public contact; occasional working alone.

Additional physical/mental requirements or frequencies may be required, depending upon assignment.

ENVIRONMENTAL CONDITIONS

Work is typically performed in an indoor office environment, but occasionally requires travel to other locations. Work environments may include high levels of noise, dust and/or unpleasant odors. Occasional early morning, evening, holiday and/or weekend work may be required.