

DESIGN NETWORK ENGINEER

DEFINITION

Designs, advises, manages, implements, and assists with internetworking infrastructure systems throughout the District, including all aspects of data, voice, and video convergence.

TYPICAL DUTIES

Supervises the work of lower-level technicians and contractors engaged in assisting and implementing the internetworking infrastructure systems throughout the District.

Plans, designs, and implements data, voice, and video convergence integration.

Implements and manages Internet Protocol Telephony (IPT) deployment in a call management cluster environment with unity voice integration.

Performs design, implementation and performance engineering analysis, and diagnosis of large complex AVVID (Architecture for Voice, Video, and Integrated Data) systems.

Assists in developing architectures and planning for enterprise-wide tactical and strategic requirements, system definition, and feasibility determination within a complex systems environment.

Assists in the development and implementation of a multi-system capacity plan.

Integrates and schematically depicts communication architectures, topologies, hardware, software, transmission and signal links, and protocols into system configurations.

Manages or performs multimedia network installation, configuration, and ongoing maintenance including field services.

Analyzes local area networks (LAN), wide area networks (WAN), and circuits.

Evaluates new products and technologies, performs network problem resolution, and assists in the development and documentation of technical standards and interface applications.

Assesses system-wide infrastructure for protocol compatibility and system tuning and makes recommendations for improvement.

Acts as the project leader on enterprise-wide assignments for the implementation of emerging or new District-level technologies.

Performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS AMONG RELATED CLASSES

The Design Network Engineer supervises lower-level technicians and contractors assisting in planning, managing, and implementing current and emerging technologies from an enterprise level.

A Senior Design Network Engineer supervises and manages a team of Design Network Engineers to drive continuous improvements and growth in network technologies, internet routing, and virtual private networks.

A WAN Specialist II programs, configures, analyzes, and monitors advanced auxiliary WAN support equipment, and provides specialized voice, video, and security expertise to ensure reliability of the District's enterprise network.

SUPERVISION

Administrative direction is received from a Senior Design Network Engineer, the Director of IT, Network Operations, Deputy Director of IT, Infrastructure Project Management, or the Strategic Planning Systems Engineer. General and technical supervision is exercised over lower-level technical personnel and contractors.

CLASS QUALIFICATIONS

Knowledge of:

- VoIP, QoS, SIP, video conferencing, and video streaming
- LAN/WAN internetworking
- Wi-Fi, Cisco and Aruba Technology
- IEEE 802.x networking standards
- Cisco and Aruba WLAN technologies
- IP multicasting and troubleshooting
- Cisco routers and HP, Alcatel, Cisco switches
- Protocols including TCP/IP, OSPF, BGP, NetBIOS, DHCP, LDP, MBGP, MPLS, NAT64, IPv6, OSPFv3, TFTP, HTTP, and IPsec
- IP classes, subnets, multicasts, and NAT
- Network analysis tools
- LAN/WAN network design, integration, and implementation
- Principles of LAN/WAN/multimedia network design, traffic engineering, network security administration, encryption technologies, software, and applications
- Video compression Technology (MPEG-1, MPEG-2, MPEG-3, MPEG-4), digital video broadcast technologies, set-top-box technologies, web-based client/server applications, and interactive or enhanced television
- Valcom IP solutions

Ability to:

- Install and configure wired and wireless LAN equipment such as Aruba, Alcatel-Lucent, Cisco, and HP
- Implement and integrate multivendor VoIP systems including Avaya Communication Servers, Cisco Unified Communications Manager (CallManger), Cisco Unity messaging servers, TelePresence, firewalls, routers, and switches
- Implement and configure SIP trunk and endpoints
- Perform root cause and trend analysis
- Perform capacity analysis and planning
- Configure IP based Public Address Systems such as Singlewire InformaCast
- Actively resolve network problems, failures, and performance issues
- Provide design enhancements to existing networks and develop new network capabilities
- Work well under pressure and manage multiple large projects simultaneously
- Produce and maintain documentation of complex network implementations
- Formulate and express ideas clearly and effectively orally and in writing
- Set priorities and successfully complete tasks in a timely manner
- Analyze and interpret materials and problems involving rules, procedures, documentation, and related matters
- Maintain effective relationships with District personnel and representatives of manufacturers and other organizations
- Motivate and lead employees

Special Physical Requirement:

Ability to safely lift and carry tools and materials weighing up to 50 pounds

ENTRANCE QUALIFICATIONS

Education:

Graduation from a recognized college or university with a bachelor's degree in math, computer science, information systems, electrical engineering, data communications, network engineering, telecommunications management, or a related field. Qualifying experience in addition to that listed below may substitute for the required education on a year-for-year basis provided that the requirement of a high school diploma or equivalent is met.

Experience:

Six years of direct experience designing, engineering, and configuring VoIP of enterprise network systems. This experience must include two years of experience designing, engineering, configuring, and integrating VoIP and Wi-Fi technology into an enterprise IT infrastructure. One year of multimedia, public address and intercommunication networking, engineering, installation, configuration, or ongoing maintenance is preferable.

Special:

A valid California Driver License

Use of an automobile

Cisco Certified Network Professional (CCNP) or Cisco Certified Design Professional (CCDP) is required

Cisco Certified Internetwork Expert, Alcatel, Cisco Certified VoIP certifications, and Aruba are highly preferable

SPECIAL NOTE

Employees in this class may be required to work varying shifts.

The class description is not a complete statement of essential functions, responsibilities, or requirements. Entrance requirements are representative of the minimum level of knowledge, skill, and /or abilities. To the extent permitted by law, management retains the discretion to add or change typical duties of a position at any time, as long as such addition or change is reasonably related to existing duties.

Revised
8-31-15
SJ