Senior System and Network Administrator

Under the responsibility of the head of the Information System Manager, performs complex duties in the design, development, installation, upgrade, integration, administration, maintenance of the school's LAN and WLAN infrastructure. Monitors network servers, equipment and devices for performance and stability. Designs, installs and monitors network security devices, software, protocols and processes. Serves as a technical advisor and/or project manager on network and configuration issues. Performs related duties as assigned. Works in a transversal way with all the school's departments.

IT Department in figures:

- 2 separate sites
- 6 physicals servers hosting 20+ servers' VM
- 35 L3, L2 switches (cores & secondary)
- 130 iPads
- 330 laptops and computers
- 15 networked multi-functionals devices
- 60 video projectors et 20 Interactive Whiteboards
- 60 Access Point (Ubiquiti)
- 1600+ user accounts (AD, Office 365 accounts, contacts management)
- 250+ Groups and Teams

The Main Missions:

Perform complex duties in the design, development, integration and administration of the school networks architecture including switching, routing, overall network services and network security. Troubleshoots and resolves the network performance and connectivity problems.

Designs and develops, multi-segment network infrastructure; designs, develops, installs, integrates and maintains the network physical infrastructure incorporating multiple technologies and protocols. Installs, upgrades, replaces, configures, integrates and maintains network hardware, software and devices, including servers, switches, routers, bridges, gateways and cabling and other wiring equipment; creates, reallocates or deletes subnets or virtual networks to improve performance and increase security.

Designs, develops, installs, configures and maintains network operating system software and network infrastructure applications. Maintains software installation libraries. Monitors directories and domains and audits server logs to identify performance issues and device failures. Installs server fixes and service packs to maintain reliability and security.

Designs, develops, installs, configures, maintains and troubleshoots PoE switches, UPSs, and related equipment.

Designs, develops, installs, configures, maintains and troubleshoots NAS, SANs.

Designs, conducts site surveys, installs and maintains wireless access points and associated wireless equipment, devices and software throughout school locations. Creates and maintains firewalls and authentication servers and encryption methods to wireless access points. Creates and maintains wireless domain services to allow wireless roaming. Troubleshoots and resolves wireless interference, connectivity, performance and security problems.

Troubleshoots, diagnoses and resolves server connectivity and performance issues. Administers network standards, including naming conventions and address protocols. Monitors, analyzes and manages network traffic and other conditions to achieve optimal performance and uptime. Analyzes data to minimize network congestion.

Analyzes network capacity and growth requirements and recommends network infrastructure upgrades and enhancements to meet long-term District needs. Develops plans for server room expansion including rack space, floor space, cooling and power requirements. Installs server racks, uninterruptible power supplies and other server support equipment. Develops specifications for network hardware, software and cabling upgrades and enhancements.

Designs, installs and administers new security systems and methods. Creates and maintains security rights on network resources. Maintains and administers the firewall rule base and authentication systems. Monitors for network intrusions and security breaches. Implements and enforces the enterprise network security policy and remote access standards and guidelines.

Performs project leadership functions for network installation projects. Participates in planning and managing large migration and conversion projects. _Creates network management scripts to automate software installation_, workstation management and network resource assignments. _Creates scripts to automate bulk configuration changes to network switches_.

Provides technical advice, solutions and field training to user support staff. Develops tools to assist staff in deploying software, configuring settings and troubleshooting and resolving a variety of workstation problems. Performs advanced troubleshooting on network hardware, software and connectivity problems. Performs _third level_ problem resolution.

Researches and evaluates hardware and software for compatibility, serviceability, design and performance. Develops specifications and recommends the purchase of computer/network-related hardware and software.

Develops prototype systems to test for integration, feasibility and reliability.

Performs other related duties as assigned or requested.

Systems:

- Servers/computers: EsXi, Windows (OS and Servers) & _Linux (Debian, CentOs)_
- Network and equipments: Fortigate 200F , DELL switches (CLI Management), WLC, SD-WAN and SDN.
- Cloud solutions: Microsoft 365, Exchange Online, Teams, Azure, Cloudflare, Jamf, Apple School Manager, Office Scan Apex, osTicket and Papercut.

- Internet plateforms: WordPress Multisites, AWS (Lightsail, EC2)
- Web Hosting Infrastructure: Nginx and Apache, Mariadb, MySQL, MsSQL, PHP, IIS, LemonLdap-NG
- Synology Backup (Active Backup Business, Active Backup for Microsoft 365)
- Image plateform deployment: MDT & WDS
- Software deployment on request (WAPT), MSI packages creation, Python scripts
- Shell scripting: Powershell, CSharp, ASP.Net, Python, Bash script linux
- Supervision tools (Zabbix) and inventory management (GLPI)
- Access card management system (CALMS) and alarm systems (BODET)
- Database Management

Required skills:

Education and Experience:

Graduation from a college or university with a major in computer science, management information systems or a closely related field or Microsoft Certified Systems Engineer (MCSE) certification or Cisco Certified Systems Associate (CCNA), good knowledge of English spoken written and technical language.

Knowledge / Areas of Expertise:

- Wired and wireless network architectures and theory and principles of network design and integration, including topologies, protocols and network load distribution.
- Principles, methods and techniques for layout, installation, configuration, integration and operation of network systems, components, equipment and devices.
- Principles, methods and techniques for installation, configuration, integration and operation of NAS, SANs systems, components, equipment, devices and software.
- Server hardware and operating system architecture, directory services, characteristics, commands and components applicable to schools' servers and computer platforms.
- Standard network management software, equipment, tools and utilities.
- Methods and techniques for performing connectivity testing and network analysis and troubleshooting.
- Principles, practices and methods of network administration and maintenance, including configuration, performance tuning and diagnostic tools.
- Wired and wireless network security principles, equipment, software, practices, techniques and tools, including encryption standards and authentication methods.
- Principles, practices and methods of systems administration and maintenance.
- Disaster planning and recovery techniques.
- Database management systems and software.
- Standard programming and scripting languages and utilities applicable to responsibilities.
- Network media and cable plant design and layout.
- Project management methods, tools and techniques.
- Basic knowledge of building construction including reading building plans, framing, construction materials, electrical and general concepts for the proper installation of network cable and wireless networking equipment.

Abilities/Skills:

- Design, configure, manage and maintain the operations of complex wired and wireless network systems to achieve optimal technical performance and user support.
- Troubleshoot complex network hardware, software and/or connectivity problems and make modifications and fixes to resolve problems.
- Prepare clear, concise and accurate system documentation.
- Work collaboratively and effectively as a team member.

Working conditions:

- Typical office environment.
- Extensive computer work.
- Long periods of sitting.
- Move from one location to another as needed (2 sites).