

**CLARKSVILLE-MONTGOMERY COUNTY SCHOOL SYSTEM  
CLARKSVILLE, TENNESSEE  
CLASSIFIED JOB DESCRIPTION**

**Job Title: Systems Administrator**

**Department: Technology**

**Grade: Administrator Pay Grade 501**

**Job Description**

**Reports To: Chief Technology Officer**

**Date Reviewed: November 2019**

**Purpose of Job**

The purpose of this job is to provide management, administration, and oversight with regard to the technical operation of the servers and technical equipment within the district, to include but not limited to system backups, maintenance, security, networking and administration of the servers, and support of design and implementation of complex local and wide-area networks of machines.

This position is considered Mission Essential to the District and the Technology Department, in accordance with HUM-A012. A Mission Essential Employee is critical in addressing incidents that result in an interruption of normal functionality of district technology resources for students and staff.

**Essential Duties and Responsibilities**

**The following duties are normal for this job. These are not to be construed as exclusive or all-inclusive. Other duties may be required and assigned.**

Responsible for the management and availability of critical operational systems, including financial, employee, and student information servers and databases, and maintaining backups of critical systems through the district Disaster Recovery Plan.

Provides management and application of updates, security and patches, and configuration changes to software and operating systems.

Responsible for development, implementation, maintenance, and review of the district's Disaster Recovery Plan, to include developing, maintaining, and testing backups; system and database restoration plans; and support for the backup and recovery process.

Evaluates and/or recommends server purchases and works with vendors to determine and specify server requirements to support district technology.

Works with the Chief Technology Officer to establish and implement security & network policies.

Administers firewall and IDS security devices to include writing security and NAT policies.

**Networking Responsibilities**

Management of internetworking Microsoft, Apple, and Linux operating systems.

Configuration of file systems including NFS, NTFS, ZFS, EXT and HFS.

Development of network file synchronization schemes including DFS and rsync.

Management of TCP/IP networking and non TCP/IP protocols and the ability to debug and program at the network level. Specific knowledge of highly complex TCP/IP networks (networks that contain multiple routers and multiple media).

Installation and administration of DHCP, DNS, and VPN.

Installation and configuration of network load balancers.

Installation and configuration of virtual network switches and policies.

**Server Responsibilities**

Management of server operating systems including Microsoft Server, OS X Server, and Linux.

Management, design, and implementation of high-end disk storage systems related to data protection and supporting storage applications and networks.

Administration of large Microsoft Active Directory environment.

Management of Microsoft Exchange environment to include administration, configuration, and monitoring in large, on-premise, clustered enterprise environment consisting of multiple DAG, CAS, and Hub transport servers. Creation and management of Exchange server/mailbox policies, relays, connectors, mailbox quotas, and advanced transport rules.

Administration of large virtual environment to include configuring and maintaining virtualized servers and equipment in VMWare, HyperV, and other Virtualization technologies.

Configuration and interconnection of large SANs for use in virtual environment to include tuning ZFS file system on SANs.

Writing and editing scripts using PowerShell, SQL, bash and batch files, and writing MSI files.

Configuring and maintaining web servers to include certificates, logs, security, management, and performance tuning.

**Security Responsibilities**

Maintaining knowledge of general security measures as they relate to servers, networks and client machines.

Implementation and maintenance of network security policies, access control, application security, and data safeguards.

Implementation and maintenance of network security (for example, building firewalls or deploying authentication systems).

Configuration and maintenance of host security (for example, passwords, IDS/GIDS, file permissions, file system integrity, use of security packages).

Configuration and monitoring IDS/IPS and content filtering devices.

Analyzing network, server, and application logs for troubleshooting and/or general maintenance or optimization.

Experience configuring and maintaining Firewall and threat prevention devices to include writing security, NAT, IDS, and URL policies.

### **Database Responsibilities**

Administering Oracle, PostgreSQL, and SQL database to include capacity planning, installation, configuring, database design, migration, performance monitoring, security, troubleshooting, as well as backup and data recovery.

Installing and upgrading the database server and application tools as required.

Planning, allocation, and optimization of database structures in both a virtual and physical storage environment.

Backup and restoration of all local databases to include Oracle, PostgreSQL, and SQL.

### **Required Skills**

Strong interpersonal and communication skills, capable of writing purchase justifications, training users in complex topics, making presentations to an internal audience or professional peers, and interacting positively with customers of all levels.

Independent problem solving and self-direction.

Ability to identify tasks which require automation and automate them.

Familiarity with fundamental networking/distributed computing environment concepts; understands principals of routing and the design of consistent network-wide file system layouts.

Experience developing/implementing a site disaster recovery plan.

Experience configuring and maintaining storage arrays including ISCSI and Fiber channel SANS and direct attached storage.

Experience with specific operating systems, applications, or programming languages (for example, Windows operating systems, SQL).

**Additional Job Functions**

Performs other duties as required.

**Minimum Training and Experience Required to Perform Essential Job Functions**

- Bachelor’s Degree in Computer Science or a related field preferred.
- Three to five years systems administration experience with expertise in Microsoft and Apple products recommended.
- Experience with MS Exchange, previous experience as a system or database administrator, experience with a site with 100% uptime requirement required.
- Any equivalent combination of education, training, and experience which provides the requisite knowledge, skills, and abilities for this job, will be considered when determining eligibility.
- Valid driver’s license and the ability to provide reliable transportation to deliver equipment or provide needed services to all CMCSS locations.

**KNOWLEDGE OF JOB**

Has considerable knowledge of the policies, procedures, and activities of the School System and Technology practices as they pertain to the performance of duties relating to the job of Systems Administrator. Has thorough knowledge of best practices as necessary in the completion of daily responsibilities. Knows how to develop and administer operations and staff plans and objectives for the expedience and effectiveness of specific duties of the department. Knows how to keep abreast of any changes in policy, methods, computer operations, equipment needs, etc. as they pertain to department operations and activities. Able to effectively communicate and interact with supervisors, members of the general public, and all other groups involved in the activities of the department. Able to assemble information and make written reports and documents in a concise, clear, and effective manner. Has good organization, human relations, and technical skills. Able to use independent judgment and work with little direct supervision when necessary. Has the ability to comprehend, interpret, and apply regulations, procedures and related information. Has comprehensive knowledge of the terminology, principles, and methods utilized within the department. Has the mathematical ability to handle required calculations. Knowledgeable and proficient with computers. Able to read, understand and interpret financial reports and related materials.

**(ADA) MINIMUM QUALIFICATIONS OR STANDARDS  
REQUIRED TO PERFORM ESSENTIAL JOB FUNCTIONS**

**PHYSICAL REQUIREMENTS:** Must be physically able to operate a variety of automated office machines and computer equipment which includes a mainframe computer, personal computer, printer, modem, calculator, telephone, etc. Must be able to use body members to work, move or carry objects or materials. Must be able to exert up to forty-five pounds of force occasionally, and/or up to ten pounds of force frequently. Physical demand requirements are at levels of those for Sedentary to Medium work.

**DATA CONCEPTION:** Requires the ability to compare and/or judge the readily observable functional, technical, structural, or compositional characteristics (whether similar to or divergent from obvious standards) of data, people, or things.

**LANGUAGE ABILITY:** Requires the ability to read a variety of informational documentation, directions, instructions, and methods and procedures related to the position. Requires the ability to understand and communicate within computer operating systems to include Windows, Mac OS, Linux, etc., and requires an understanding of network protocols. Requires the ability to write reports with proper format, punctuation, spelling and grammar, using all parts of speech. Requires the ability to speak with and before others with poise, voice control, and confidence using correct English and a well-modulated voice.

**INTELLIGENCE:** Requires the ability to learn and understand complex principles and techniques; to make independent judgments in absence of supervision; to acquire knowledge of topics related to the position.

**VERBAL APTITUDE:** Requires the ability to record and deliver information to supervisors and officials; to explain procedures and policies; and to follow verbal and written instructions, guidelines, and objectives.

**NUMERICAL APTITUDE:** Requires the ability to utilize mathematical formulas; add and subtract totals; multiply and divide; determine percentages; determine time and weight; and utilize statistical inference.

**FORM/SPATIAL APTITUDE:** Requires the ability to inspect items for proper length, width, and shape, visually with office equipment.

**MOTOR COORDINATION:** Requires the ability to coordinate hands and eyes while using automated office equipment.

**MANUAL DEXTERITY:** Requires the ability to handle a variety of items, office equipment, control knobs, switches, etc. Must have the ability to use one hand for twisting or turning motion while coordinating other hand with different activities. Must have average levels of eye/hand/foot coordination.

**COLOR DISCRIMINATION:** Requires the ability to differentiate colors and shades of color.

**INTERPERSONAL TEMPERAMENT:** Requires the ability to deal with people (i.e. staff, supervisors, general public, and officials) beyond giving and receiving instructions such as in interpreting departmental policies and procedures. Must be adaptable to performing under moderate stress when confronted with an emergency related to the position.

**PHYSICAL COMMUNICATION:** Requires the ability to talk and/or hear: (talking - expressing or exchanging ideas by means of spoken words). (Hearing - perceiving nature of sounds by ear).

**ATTENDANCE:** A regular and dependable level of attendance is an essential function for this position.

The Clarksville-Montgomery County School System is an Equal Opportunity Employer. In compliance with the Americans with Disabilities Act, the school system may provide reasonable accommodations to qualified individuals with disabilities and encourages both prospective and current employees to discuss potential accommodations with the employer. Signatures below indicate the receipt and review of this job description by the employee assigned to the job and the immediate supervisor.

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**Employee's Signature**

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**Supervisor's Signature**

\_\_\_\_\_  
**Date**

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**Date**