Sacramento County Office of Education Job Description
Classification Title: Systems Engineer/Administrator

DEFINITION

Under the direction of the departmental director, responsible for the installation, configuration, operation, and maintenance of the agency's physical and virtual server infrastructure including provisioning, integrating and managing all systems hardware and software components; perform other duties as assigned.

DIRECTLY RESPONSIBLE TO

Director I, Technology Services

SUPERVISION OVER

Professional, technical, and clerical personnel as assigned.

DUTIES AND RESPONSIBILITIES

(This position may not include all of the listed duties, nor do all of the listed examples include all tasks that may be found in this classification.)

Engineering and Provisioning
Engineers systems solutions for various projects or organizational/operational needs; designs, documents, implements, configures and maintains the agency's virtual server and virtual desktop infrastructures, including all associated hardware systems, software, system automation, and licensing; installs and/or upgrades virtual and physical servers as needed; configures hardware, operating systems, services, settings, and storage in accordance with standards and project/operational requirements; designs, documents, implements, configures and maintains the agency's cloud services infrastructure; designs, documents, implements, configures and maintains the agency's disaster recovery plan/site; develops and maintains installation and configuration procedures; develops and maintains systems standards; develops and maintains system automation scripts, programs, web applications, and services; researches and recommends innovative and automated approaches for system administration tasks; identifies techniques or new technologies that leverage existing resources or provide economy of scale.

Operations and Support
Performs daily system and integrity monitoring of all hardware, server, and cloud resources; reviews system and application logs and data; oversees and monitors regular backup and snapshot operations; ensures backup media is secured offsite and properly destroyed when retired; ensures replication of important assets and servers to remote disaster recovery site; conducts regular security audits of supervised systems; creates, changes, and deletes network and email user accounts; organizes, configures, and maintains Office 365 and Google G Suite cloud services; organizes and maintains Active Directory user and object accounts; maintains user workgroup file and printer shares and permissions; administers and supports all aspects of the electronic mail system; administers and supports the organization's SharePoint infrastructure; administers and supports the organization's source code repository; updates firewall policies and monitors logs for suspicious activity; monitors web filtering system and updates filtering policies and assignments; provides server and supervises infrastructure support for the organization's voice over IP (VoIP) phone system; manages system-wide anti-malware and intrusion prevention systems; maintains DNS and DHCP infrastructure; maintains web, application, and database service infrastructure; coordinates and provides oversight for the configuration of network-related devices such as copiers, printers, scanners and other network appliances; creates, renews and administers server certificates for web and other servers that require encrypted communication; responsible for access to sensitive systems containing all data stored on file servers by employees and departments; manages various server application technologies to support a variety of departmental needs; repairs and recovers from hardware or software failures; creates and updates documentation for systems on an ongoing basis; manages technical staff; selects, trains, supervises, and evaluates assigned personnel; coordinates and communicates effectively with subordinates, co-workers and external departmental staff.

Maintenance
Applies firmware and operating system updates, patches and upgrades; updates hardware and software services and configurations as needed; updates source code for system automation tasks as needed; performs ongoing performance tuning and resource optimization; utilizes performance reporting and data to support capacity planning; configures CPU, memory, and server partitions/data stores as required; performs preventative system maintenance as needed; maintains data center and server monitoring technologies.

Systems Security and Forensics Analysis
Designs and implements preventative security measures for physical and virtual servers, computers, and data systems and infrastructures; audits source code and advises on secure programming best practices as required; maintains intrusion detection and prevention systems; monitors server and system logs for suspicious activity, abuse or unauthorized access; maintains web filtering and reporting systems; maintains and monitors firewalls to protect server and client systems and provide access to appropriate network/server applications as required; performs in-depth forensics analysis of computer and/or user activity utilizing a variety of electronic tools and resources; maintains chain-of-evidence procedures; provides detailed activity reports to authorities and authorized personnel.

Supported Technologies
Provides direct management and support of the following technologies: VMware vSphere and Horizon virtual server and desktop architecture, Office 365 and Google G Suite cloud offerings, rack mount and blade servers, iSCSI Storage Area Network (SAN), Palo Alto Networks firewall systems, physical desktop/laptop management software, mobile device management (MDM), web filtering technologies, anti-virus/anti-malware technologies, Windows Server , Red Hat Enterprise Linux , standard Windows server file and print sharing services, Active Directory infrastructure, Windows Software Update Services (WSUS), IIS, Apache, SQL Server, MySQL Server, PostgreSQL Server, e-mail anti-spam servers/appliances, video streaming servers, Adobe Connect servers, Filemaker Pro servers, SharePoint farms, source code repository systems, various curriculum and instruction-related servers, learning management systems, ShoreTel voice over IP (VOIP) system server support, common open source software and technologies, and all other server- and systems-related technologies and infrastructures that are utilized to provide system services to programs and departments.

MINIMUM QUALIFICATIONS

Education, Training and Experience
Bachelor's degree with a technical major such as Computer Science; Systems Engineering/Administration trainings or certifications in related technologies (Microsoft, Linux, VMWare, etc.); experience in supervising a highly technical staff desirable; progressive Systems Engineering/Administration experience desirable.

Knowledge of:
VMWare server and desktop virtualization technologies; Windows server technologies and features (Active Directory, Internet Information Services, DNS, DHCP, FTP, File Sharing, Print Sharing, etc.); Microsoft SQL Server administration; Office 365 administration; Application Server administration (.NET, ColdFusion, PHP); Linux operating system administration; SSL certificate infrastructure; in-depth knowledge of the Internet's Domain Name System (DNS) infrastructure; PowerShell and/or Bash scripting techniques; principles and techniques of supervision, training, and evaluation.

Skill and Ability to:
Diagnose, troubleshoot and resolve difficult and challenging technical problems with little or no assistance; perform forensics analysis of a computer, data, or email account; maintain confidentiality of sensitive data in a secure manner; set priorities and make decisions on a variety of complex matters; organize work to meet strict deadlines; plan, coordinate, and supervise the work of a highly technical staff; select and train personnel; communicate effectively in both oral and written forms; interact with clients and users in non-technical, clear terms; establish and maintain cooperative working relationships with subordinates, clients and co-workers, and clients; keep current on new and emerging technologies and standards.

Other Characteristics
Willingness to be on-call for emergency server failures, and work additional hours and/or evenings and

weekends on occasion in order to perform planned or emergency system maintenance.