

Job Title: **Principal Systems Architect**
 Job Family: **Non-Certified**
 Pay Program: **Administrative**
 Prepared/Revised Date: **July 2015**

Job Code: **130901**
 FLSA Status: **Ex - C**
 Pay Range: **Level 05**
 Work Year: **12 months**

SUMMARY: Responsible for the design and maintenance of the Adams 12 Five Star Schools district information technology architecture, including computing, storage, data communications, and application server support and integration. In addition, responsible for the security architecture, resilience, and incident response capabilities of the district. Collaborate with key stakeholders across a broad range of knowledge domains in order to formulate, deploy, and maintain high quality service level agreements. Ensure that the district is making quality and cost effective technical choices in hardware architecture, service architecture, and technical strategies. Provide the highest technical level of systems troubleshooting, incident response, and solutions design within the district. Design and implement strong log review, alert, and response processes for maintaining the technical state and security posture of district information technology infrastructure that ensure that timely, actionable, and critical information is presented to the CITO and IT managers. Ensure broad and current technical awareness by establishing and maintaining technical and professional relationships with appropriate organizations of strategic importance to the district. Areas of district-wide responsibility include but are not limited to technology strategy formulation, information assurance planning, performance monitoring and tuning, data communications deployment, enterprise application platform integration and support, and resilience and security testing.

ESSENTIAL DUTIES AND RESPONSIBILITIES: *To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

Job Tasks Descriptions	Frequency	% of Time
1. Design and maintain an efficient and forward-looking enterprise systems architecture that effectively and efficiently meets the computing, storage, security, and data communications requirements of the district. This includes analyzing and applying, where appropriate models such as the ISO9000, CMM, SixSigma, or other models that can enable and ensure high levels of capability and agility. It also includes providing design and documentation in relation to architectural frameworks where appropriate such as Zacchman, Gartner, TOGAF, or The Federated Enterprise Architecture.	D	20
2. Lead the Academic Computing Services department (ACS) technical team to establish, maintain and monitor the security posture of the district’s information technology infrastructure. This includes developing a security architecture validated through NIST, NSA, DoD reference, and other standards bodies in addition to current professional practice. Analysis responsibilities include assessing the district’s vulnerabilities using products similar to the Backtrack suite as appropriate. Respond to new vulnerabilities in relation to US-CERT and other entities, providing appropriate mitigation and response. Deploy and maintain broad information technology forensic capabilities using technologies similar to FTK and network forensic tools like SNORT and RedEye that have the capability of supporting highly contentious litigation or governmental action in relation to malicious, unauthorized, or covert activity. Maintain connections with governmental agencies involved in cyber-attack incidence response and digital crime reporting. Maintain a coherent architectural strategy for the district in relation to authentication, encryption, certificate services, monitoring, vulnerability assessment and risk mitigation. Provide well-researched guidance on IDS, APT detection, DDoS attack resilience, Malware control, and system hardening.	D	20
3. Provide exemplary technical leadership for the ACS department by modeling good practice, sharing expertise, assessing the quality of technical configurations and practices, and developing paths to improvement. Do this in areas such as hypervisor infrastructure like Xen or VMware; management systems deployment like LANDesk, KACE, Altris, and SCCM; directory architectures like AD, LDAP,	D	10
4. Under the direction of IT leadership, the legal staff, and district data owners to ensure that the district IT systems achieve and enable regulatory compliance, information assurance, operations resilience, safety, appropriate professional and education environment, and other	D	10

district interests. Maintain that infrastructure in relation to regulations like FERPA, COPA, CIPA, Colorado Department of Education requirements, and other pertinent regulations that have jurisdiction over district information technology.		
5. Work with district stakeholders and IT administrative leadership to design, revise, and meet service level agreements for enterprise application environments, computing resources, network availability, and related resources that fulfill district objectives. This includes designing services and providing the automated monitoring systems to ensure services like HP OpenView, Foglight, or similar products.	D	10
6. Research and evaluate technologies and technology providers to ensure that the district makes quality and cost effective technical choices in equipment, services, and strategies. Ensure that the department is aware of industry best practices and is well informed in regards to service opportunities, security risks, and innovations that might have impact on the district. This includes SAN technologies like EMC, CommVault, HDS, and HP; Virtualization technologies like VMware, Xen, VDI; network technologies like Cisco, Juniper, HP, and Nortel; server hardware and connections like blade servers, distributed service architectures, Grid architectures, cluster architectures, FC, iSCSI, Infiniband, the 802 suite of protocols, and software defined networks; and datacenter infrastructure like UPS systems, FM200, Generator power, and the integration of other facilities and regional resilience strategies.	D	10
7. Provide the highest technical level of enterprise systems troubleshooting, incident response, and solution design within the district. This includes working to enable functionality for cloud services like Google, S3, and cloud-based education software; MDM and NAC systems as deployed, monitored and managed through centralized resources; and specialized issues related to VPN, testing environments, VDI, XenApp, Hyper-V and/or other remote and virtualization technologies. Be able to adapt district infrastructure resources to support an evolving fleet of end-point devices that include but are not limited to Windows, Unix, Linux, Droid, iOS, Macintosh, and custom environments. Develop and implement deployment and information security strategies that support mobile devices, telecommuting, social networking, cloud infrastructure, tele-learning, district devices taken home by students, and BYOD.	D	5
8. Work under the direction of IT administrative leadership to establish and maintain technical project progress and a high degree of business process and communications efficiency. Employ and maintain a strong base of project management and corporate communications practices knowledge. This includes expertise in resources like the PMI BOK, SharePoint, MS Project, MS Exchange infrastructure, Google corporate service suites, versioning and change management systems, team leadership skills.	D	5
9. Work with the IT administrative leadership to design and maintain reporting policies and procedures that provide the CITO and I.T. managers with timely and actionable information related to enterprise design, system performance, security issues and technical procedures.	D	5
10. Perform other duties as assigned.	Ongoing	5
TOTAL		100%

EDUCATION AND RELATED WORK EXPERIENCE:

- Bachelor’s degree in Systems Administration or related field. Four (4) additional years of similar and relevant experience may be substituted for this requirement.
- Minimum of ten (10) years current experience in enterprise class design and architectural development, top tier incident response at an organization of 40,000 or more users, strategic technology analysis, and regional infrastructure implementation.
- Minimum of five (5) years of technical leadership roles that includes collaboration with an organization’s non-technical executive teams, leading top-tier technical teams within a 40,000 or more user organization, and providing information assurance and resilience at the highest level.

LICENSES, REGISTRATIONS or CERTIFICATIONS:

- Criminal background check required for hire.

TECHNICAL SKILLS, KNOWLEDGE & ABILITIES:

- Strategic, current and detailed knowledge of enterprise-class information systems technologies and architectures at the scale of the district or greater.
- Expert and current skills in troubleshooting enterprise-class integration issues, responding to regional-scale security incidents, and designing & implementing systems capable of high levels of uptime and resilience.
- Ability to work with groups that vary from highly technical consultants to non-technical personnel and effectively convey issues, organize activities, and translate requirements into clear technical options.

- Ability to write strategic documents, policy, and procedures in support of information systems functional requirements and the needs of the district.
- Ability to propose, justify, plan, and bring to closure highly complex and large scale information technology projects.
- Ability to design and implement change management processes, testing procedures, enterprise systems and network monitoring, large scale management technologies, service level agreements, and information assurance measures.
- Ability to promote and follow Board of Education policies, Superintendent policies, building and department procedures.
- Ability to communicate, interact and work effectively and cooperatively with all people, including those from diverse ethnic and educational backgrounds. Willingness to contribute to cultural diversity for educational enrichment.
- Ability to recognize the importance of safety in the workplace, follow safety rules, practice safe work habits, utilize appropriate safety equipment and report unsafe conditions to the appropriate administrator.
- On call and/or respond to calls 24/7.

MATERIALS AND EQUIPMENT OPERATING KNOWLEDGE:

- Strategic knowledge of a range of enterprise class infrastructure equipment including
- Internet protocol networks – Cisco, Juniper, Brocade, HP, Nortel using BGP, OSPF, STP, and related protocols
- Converged networks using QoS to manage diverse services including Video on Demand, VoIP, VMware, Xen, SAN, secure transaction, web, encrypted access, media collaboration, and guest access.
- System, access and desktop virtualization including VDI, Citrix, VPN, secure application and enterprise portal solutions
- Enterprise application environments supporting applications like SAP, Oracle, PeopleSoft, etc.
- Portal services like SharePoint, Drupal, and other content management system and web application Environments
- Security and service architectures that include SSO, SAML, RADIUS, Windows Domains, and LDAP-based systems, enterprise-wide malware defenses, IPS, APT protections, and other related technologies.
- Wide area networks including resolving issues of propagation latencies as they affect applications, SLA management, enabling enterprise-scalable cloud services, telecommunications systems, end-user devices, and secure remote & mobile computing technologies.
- Expert knowledge of complex server and service integration designs, internal and external cloud provisioning, security testing and configuration, and forensic analysis.
- Advanced skills with a variety of office suite, communications, knowledge base, collaborative, presentation, project management, technical monitoring, troubleshooting, and technical design software and devices.

REPORTING RELATIONSHIPS & DIRECTION/GUIDANCE:

	POSITION TITLE	JOB CODE
Reports to:	Academic Computing Services Executive Director	090532

	POSITION TITLE	# of EMPLOYEES	JOB CODE
Direct reports:	This job has no direct supervisory responsibilities.		

BUDGET AND/OR RESOURCE RESPONSIBILITY:

- Provides technical recommendations and vendor communications that support the development of budgets, RFPs, and requisitions.

PHYSICAL REQUIREMENTS & WORKING CONDITIONS: *The physical demands, work environment factors and mental functions described below are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

PHYSICAL ACTIVITIES:	Amount of Time			
	None	Under 1/3	1/3 to 2/3	Over 2/3
Stand		X		
Walk		X		
Sit				X
Use hands to finger, handle or feel				X
Reach with hands and arms		X		
Climb or balance		X		
Stoop, kneel, crouch, or crawl		X		
Talk			X	
Hear			X	
Taste	X			
Smell	X			

WEIGHT and FORCE DEMANDS:	Amount of Time			
	None	Under 1/3	1/3 to 2/3	Over 2/3
Up to 10 pounds			X	
Up to 25 pounds			X	
Up to 50 pounds	X			
Up to 100 pounds	X			
More than 100 pounds	X			

MENTAL FUNCTIONS:	Amount of Time			
	None	Under 1/3	1/3 to 2/3	Over 2/3
Compare				X
Analyze				X
Communicate				X
Copy		X		
Coordinate			X	
Instruct		X		
Compute				X
Synthesize		X		
Evaluate				X
Interpersonal Skills			X	
Compile				X
Negotiate			X	

WORK ENVIRONMENT:	Amount of Time			
	None	Under 1/3	1/3 to 2/3	Over 2/3
Wet or humid conditions (non-weather)	X			
Work near moving mechanical parts	X			
Work in high, precarious places	X			
Fumes or airborne particles	X			
Toxic or caustic chemicals	X			
Outdoor weather conditions	X			
Extreme cold (non-weather)	X			
Extreme heat (non-weather)	X			
Risk of electrical shock		X		
Work with explosives	X			
Risk of radiation	X			
Vibration	X			

VISION DEMANDS:	Required
No special vision requirements.	
Close vision (clear vision at 20 inches or less)	X
Distance vision (clear vision at 20 feet or more)	X
Color vision (ability to identify and distinguish colors)	X
Peripheral vision	X
Depth perception	X
Ability to adjust focus	X

NOISE LEVEL:	Exposure Level
Very quiet	
Quiet	
Moderate	X
Loud	
Very Loud	