

## DATA CENTER ARCHITECT

### DEFINITION

Architects, implements, and manages data center design and provides technical direction for projects in the field of platform technologies, including but not limited to data center disaster recovery, rationalization studies and opportunity assessments, server/storage/data center consolidation and assessment.

### TYPICAL DUTIES

- Provides advice and guidance to District project managers in the analysis of systems and operations requirements for major application projects as a subject matter expert.
- Designs and oversees data center installations including cable pathways, electrical, and other physical installations according to industry standards and specifications.
- Plans and designs scalable virtual infrastructure, Vcenter, data stores, and virtual backup using best practices.
- Plans, forecasts, implements, and identifies resource requirements for multiple data centers and cloud solutions across the District.
- Develops, documents, and presents data center designs and strategies for scalable system architectures that meet or exceed project requirements, disaster recovery, cloud objectives, and growth capacity by successfully integrating with existing District infrastructure and operational capabilities.
- Participates in the optimization of information technology (IT) infrastructure by developing and documenting system configuration and deployment standards for enterprise systems based on various industry standard architectures.
- Designs, configures, develops, documents, and presents recommendations for architectural optimization of current District enterprise storage solutions including Network Attached Storage (NAS) and Storage Area Network (SAN) backup and archival, and data protection methodologies and solutions across all enterprise systems.
- Develops, documents, and presents strategies for systems consolidation, virtualization of physical servers, optimization, and scaling for IT infrastructure services including cloud solutions.
- Architects and manages capacity planning for existing and ongoing data center consolidation, rationalization projects, and application performance including CPU, memory, and storage utilization.
- Facilitates cross-functional internal communications between the Information Technology Division business units to encourage a better understanding of technology issues relating to the procurement of new equipment.
- Identifies, evaluates, and assists staff in the selection of hardware, software, and services to ensure and meet specifications and requirements.
- Assists in developing bids and evaluating them for technical and specification compliance.
- Evaluates new technology products that support the data center environment and assists in the development and documentation of technical standards and interface applications.
- Participates in the development and execution of the data center disaster recovery plan.
- Collaborates with various business units to integrate multiple data centers with the goal of maintaining operational capabilities, security requirements, and business continuity.
- Develops and publishes enterprise data center architecture communications, processes, standards, principles, and guidelines.
- Provides advice and guidance to ITD Senior Management regarding data center plans including but not limited to technical solutions, need for equipment/ refresh and priority matters and data center strategic plan.

Performs related duties as assigned.

## DISTINGUISHING CHARACTERISTICS AMONG RELATED CLASSES

The Data Center Architect has overall responsibility for planning and managing data center architecture projects in the field of platform technologies, including but not limited to data center disaster recovery, virtualization, cloud infrastructure, rationalization studies/opportunity assessments, server/ storage/data center consolidation, and assessment.

The Director of Data Center Operations directs and is responsible for equipment and operations, software support, and technical programming standards in the main data center.

The Strategic Planning Network Engineer is responsible for complex systems planning and implementation throughout the District and may supervise and coordinate efforts of Associate Strategic Planning Systems Engineers.

## SUPERVISION

Administrative direction is received from the Senior Administrator, IT Infrastructure and provides administration direction to lower-level staff, such as Operating System Specialists.

## CLASS QUALIFICATIONS

### Knowledge of:

- VMWare ESXi – all versions, vCenter, vMotion
- Dynamic Resource Scheduler (DRS) and High Availability (HA) configurations
- vCLI and scripting
- Security hardening techniques
- Security Technical Implementation Guides (STIGs) for Virtualization HW
- VMware Update Manager (VUM)
- vSphere Data Protection
- Major equipment providers including but not limited to HP, IBM, Cisco and 3PAR storage
- Major public cloud offerings (i.e. Microsoft Azure, Oracle Cloud, Amazon Web Services, OpenStack, Apache CloudStack) and related Infrastructure (IaaS), Platform (PaaS) and Software as a Service (SaaS) capabilities
- Local and remote data center design, integration, and management strategies, such as production operations, cloud computing, physical/ virtual servers, storage, backup, networking concepts, database and systems management, and disaster recovery practices
- Project and program management
- Server platform technologies, such as Wintel and Linux
- Data center Total Cost of Ownership (TCO)
- Data center, server, and mainframe components
- Assessment management tools and processes
- Facilities management such as HVAC/R and Hard Wire Topologies
- Data center concepts, including systems engineering principles and industry best practices and procedures
- Interdependencies of data center functions and technologies
- Systems architecture, including sizing, configuration, component evaluation, and selection, based on detailed requirements analysis for various industry standard architectures
- Transmission Control Protocol/ Internet Protocol (TCP/IP) networking
- Enterprise storage architecture, including requirements analysis, capacity planning, and design of NAS and SAN systems
- Enterprise backup architecture, including requirements analysis, capacity planning, and design of backup and restoration technologies, products, and procedures

Application development methodologies, such as multi-tier application architectures, standard software version control processes, and modern programming paradigms, including procedural, component based, and object-oriented programming approaches  
Application development technology, such as C, C++, Java, x86 Assembly, RISC Assembly, PowerShell, Visual Basic, Perl, PHP, and Python  
Programming structure, common metaphors, and technologies  
Relational Database Management Systems (RDBMS) as related to system and network requirements for transaction types and load

Ability to:

Architect, monitor and evaluate data center performance  
Analyze complex Data Center related problems and plan appropriate solutions  
Document complex technical architectures in textual and graphical form  
Formulate and express ideas clearly and effectively in writing and orally  
Communicate effectively both orally and in writing  
Work well as a team member and lead specific initiatives  
Maintain effective working relationships with District personnel  
Work under pressure effectively  
Perform and manage multiple concurrent tasks

ENTRANCE QUALIFICATIONS

Education:

Graduation from a recognized college or university, with a bachelor's degree in information systems, computer science, business, mathematics, electrical engineering, or a related field. Qualifying experience in addition to that listed below may be substituted for the required education on a year for year basis provided that graduation from high school or evidence of equivalent education proficiency is met. An advanced degree in one of the aforementioned fields is preferred.

Experience:

Five years of experience in the architecture, design, and engineering of an enterprise data center. The aforementioned experience should include the design, installation, configuration, and upgrade of computing infrastructure and related systems such as networking equipment, enterprise servers, mainframes, storage, backbone cabling, security, and environmental systems.

Special:

VMware VCP6 certification is preferred  
Microsoft Certified Solutions Associate certification or Microsoft Certified Solution Expert certification in cloud platform and infrastructure or mobility is preferred  
Red Hat Certified System Administrator certification is preferred  
Information Technology Infrastructure Library (ITIL) Foundation level certification is preferred  
A valid California Driver License  
Use of an automobile

SPECIAL NOTE

An employee in this class may be subject to the reporting requirements of the District Conflict of Interest Code.

This 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.

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