



**Classification Title: Infrastructure Systems Engineer**

<b>Department:</b>	Network and Technical Services	<b>EEO6 Code:</b>	3
<b>Employee Group:</b>	Classified	<b>Salary Grade:</b>	55
<b>Supervision Received From:</b>	An Assigned Information Services Manager, Network and Technical Services	<b>Date of Origin:</b>	9/2016
<b>Supervision Given:</b>	Direction and Guidance	<b>Last Revision:</b>	9/2016

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed by individual positions.*

**JOB SUMMARY.**

Ensures the stability, integrity and efficiency of the District's infrastructure systems that support the District's information technology (IT) environment by participating in, contributing to and executing the planning, design, implementation and support of a variety of complex application and infrastructure-related projects and upgrades in such areas as server hardware and storage systems, server virtualization, directory services, data center security, business applications including email services and disaster-recovery services.

**DISTINGUISHING CHARACTERISTICS.**

The Infrastructure Systems Engineer is distinguished from Senior Infrastructure Systems Administrator by the former's responsibility for serving as the technical architect, engineer, designer and administrator for all data center and infrastructure operations while the latter class serves as lead administrator for major platforms and operating systems and performs advanced duties in administering and integrating systems for optimal performance.

**ESSENTIAL AND MARGINAL FUNCTION STATEMENTS.**

**Essential Functions:** Essential responsibilities and duties may include, but are not limited to, the following:

1. Assists the Information Services Manager, Network and Technical Services in architecting, designing and maintaining the District's enterprise data center, including the daily operation of each assigned technology, ensuring the availability of data center services and communications.
2. Designs, develops, implements and maintains mid- to large-scale enterprise technologies including virtualized servers, storage systems, data center networks, backup systems and disaster recovery; mid- to large-scale enterprise email and database environments; enterprise directory services; file and print, web, distributed file system (DFS); common internet file system (CIFS) and network file system (NFS) services, and server operating systems, including Microsoft, UNIX, Linux and Apple.
3. Identifies the impact of changes in systems and applications on enterprise data center operations; assesses and resolves complex systems engineering and administration issues; determines potential solutions to resolve and prevent service interruptions; implements and administers policies and procedures for change and incident management; documents technical problems, resolutions and processes.

4. Anticipates, identifies, mitigates, troubleshoots and resolves complex system hardware, software and systems integration problems.
5. Conducts research on emerging products, services, protocols and standards in support of systems engineering and management; tests and evaluates new technologies and provides recommendations for implementing new IT solutions and/or services.
6. Participates in developing and implementing District-wide technical strategies and initiatives for the data center environment, including adoption of new tools and procedures; participates in strategic planning for network and data center functions.
7. Conducts and leads lower-level staff in system performance trending and problem root cause analysis; performs complex analysis and testing of server, storage, backup and disaster recovery environments to ensure systems are functioning optimally and efficiently.
8. Implements and monitors enterprise disaster recovery standards, including audit and legal requirements, risk analysis, recovery strategies, and the setup and maintenance of fault-tolerant hardware and data backup systems.
9. May serve as primary lead to lower-level classified and hourly Information Services staff, including coordinating work and providing technical training.
10. Leads, participates and supports a variety of IT infrastructure-related projects.
11. Maintains up-to-date technical knowledge by attending educational workshops, reviewing professional publications, establishing personal networks and participating in professional associations.

**Marginal Functions:**

1. Participates in/on a variety of committees, meetings, trainings, seminars and/or other related groups in order to receive and/or convey information.
2. Performs related duties and responsibilities as required.

**QUALIFICATIONS.**

**Experience and Education/Training Guidelines:** Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

**Experience:** Five years of increasingly responsible experience in the design, development, implementation, troubleshooting and maintenance of enterprise technologies in a mid- to large-scale data center.

**Education/Training:** Equivalent to a bachelor's degree from an accredited college or university with major coursework in computer science, information systems or a related field.

**Licenses/Certificates:**

1. Possession of, or ability to obtain, an appropriate, valid California driver's license by time of appointment.
2. One or more of the following certificates is required at time of application:
  - Cisco Certified Architect (CCAr)
  - Microsoft Certified Solutions Master (MCSM), Microsoft Certified Solutions Expert (MCSE)
  - EMC Cloud Architect (EMCCA)
  - VMware Certified Design Expert 5
  - VMware Certified Design Expert – Cloud (VCDX-Cloud) Cisco Certified Internetwork Expert (CCIE)

- EMC Data Center Architect (EMCDCA)
- EMC Platform Engineer (EMCPE)
- Virtualization (VCDX5-DCV)

**Knowledge of:**

1. Development of infrastructure strategy and IT operational policies and standards.
2. Enterprise data center operations, policies, procedures and associated technologies, including virtualization technologies, computer platforms, storage, replication, backup and uninterruptible power supply.
3. Networking technologies such as switches, routers and load balancers.
4. Security technologies such as firewalls, intrusion detection and intrusion prevention.
5. Typical enterprise operating systems such as Microsoft, UNIX, Linux and Apple.
6. Enterprise directory services.
7. Typical enterprise business applications used in higher education.
8. Principles and practices of data communications design.
9. Principles and concepts of establishing and documenting baseline systems performance.
10. Principles and practices of disaster recovery design and planning, including audit and legal requirements, risk analysis and recovery strategies.
11. Methods, operational characteristics, processes and techniques used in the installation, configuration and troubleshooting of software applications and peripheral equipment; applicable scripting and programming languages.
12. Workflow applications.
13. Principles and practices of business communication.
14. Methods of developing written specifications, standards and operating procedures.
15. Use of word processing, spreadsheet, database and other standard office software to create documents and materials.
16. Pertinent federal, state and local codes, laws and regulations.

**Skill in:**

1. Understanding and maintaining server virtualization technologies, storage systems and related technologies.
2. Understanding and applying OSI model layer networking technologies and concepts.
3. Understanding and applying knowledge of product lines and technologies utilized in performing functions of the position.
4. Specifying server virtualization requirements for system environments.
5. Understanding and defining internal business processes relevant to assigned area of responsibility and gathering project information from external business and teams.
6. Developing and writing specifications, standards and operating procedures.
7. Configuring complex data center equipment correctly and moving equipment safely.
8. Organizing, setting priorities and taking initiative on multiple assignments within area of responsibility.
9. Researching, analyzing and applying difficult concepts in complex technical literature relevant to assigned area of responsibility.

10. Independently preparing documents and materials for assigned areas of responsibility; formatting, proofreading and preparing a variety of written materials.
11. Establishing and maintaining a customer-focused work flow for a data center; supporting and responding to requests and inquiries from system users efficiently and accurately.
12. Analyzing and recommending solutions for software and hardware needs.
13. Operating a computer and other standard office equipment and using spreadsheet, word processing and database software.
14. Interpreting and applying applicable federal, state and local laws, codes, regulations and administrative policies and procedures.
15. Assigning and inspecting the work of lower-level staff.
16. Communicating clearly and efficiently, both orally and in writing.
17. Maintaining sensitivity to and understanding of the diverse academic, socioeconomic, cultural, disability, gender identity, sexual orientation, and ethnic backgrounds of community college students, faculty, and staff.
18. Establishing and maintaining cooperative working relationships with those contacted in the course of work.

#### **WORKING CONDITIONS.**

**Environmental Conditions:** The incumbent works in an office environment, amid light noise, some dust and regular exposure to video screens; and in a data center environment with low temperatures and high decibel levels with minor risk of electrical shock from computer equipment and electrical cables; occasional evening, weekend and holiday hours are required due to 24-7 data center operations.

**Physical Conditions:** Essential and marginal functions may require physical fitness requirements necessary to perform the job functions with or without accommodation, such as the ability to sit for prolonged periods and use hands repetitively to operate computers and standard business equipment; close visual acuity to view computer screens.

#### **TERMS OF EMPLOYMENT.**

The duration of any fully restricted funded position in this classification is dependent upon the continuation of funding.