The purpose of the Infrastructure Services Specialist classification provides support in various technical domains related to infrastructure services. The duties performed in this classification include: system analysis, design, development, test & evaluation activities, & integrating software, hardware, reliability, maintainability, safety, survivability, human interface & other requirements. Employees may also devise &/or recommend new approaches to problems encountered in the following technical domains:

- Data Management
- Network Administration
- Server Administration
- Storage Administration
- Information Security
- Telephony
- Information Technology Infrastructure Library (ITIL)

Job duty, knowledge, skill, and ability statements at a lower-level are understood to be able to be performed at any higher level. This classification requires technical aptitude &/or advanced knowledge in the following:

- Windows Server 2000 or Greater
- Windows Desktop – XP or Greater
- Active Directory
- Data Management Principles
- Virtualization Software
- Scripting Skills
- Remote Access Principles
- Microsoft Software
- TCP/IP - Networking and IP addressing knowledge
- DNS, DHCP, IIS/FTP
- Storage Principles
CLASS CONCEPT
The advanced level class requires extensive knowledge of database design, network concepts & business intelligence/data warehousing & storing & receives, designs & implements high availability solutions, performs solutions design, provides expert database support, ensures high availability of all databases, & ensures that all databases are fully recoverable in a disaster situation. Alternatively, performs advanced network administration or storage administration duties.

JOB TITLE
Infrastructure Specialist 4

JOB CODE
64164AG

PAY GRADE
17

EFFECTIVE
11/30/2014

CLASS CONCEPT
The expert level class requires exceptional knowledge of network or database administration duties in order to coordinate the activities of lower-level Infrastructure Specialists & provide expert advice & guidance on advanced network administration or database administration systems & infrastructure issues.
JOB TITLE  
Infrastructure Specialist 1  

JOB DUTIES IN ORDER OF IMPORTANCE (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

At the first level, performs either: (1) basic systems administration duties; or (2) unified communications duties.

(1) With respect to **basic systems administration** duties, incumbents may perform the following:

- Troubleshoots network issues, server/software updates & feature enhancements.
- Evaluates & resolves reported problems escalated by the Information Technology Specialists, (e.g., password assignments, software issues or system configuration issues).
- Installs, upgrades, & configures network printing, directory structures, user access, security, software, & file services.
- Establishes user profiles, user environments, directories, & security for networks being installed.
- Develops skills to resolve common network &/or systems administration problems by working with higher-level technical staff for resolution.
- Assists higher-level technical staff by working with vendors to resolve network &/or systems problems.
- Provides basic end user training.
- Stays current regarding new technologies, standards & techniques.

OR:

(2) With respect to **unified communications** duties, incumbents may manage unified communications, including the following:

- Managing conferencing, email, instant messaging, VoIP telephony, & voicemail.
- Works directly with other units within section to implement telephony solutions.
- Customizes smartphones & tablets to communicate properly with desired networks.
- Provides higher level customer service support to diagnose, analyze, & resolve unified communications issues for customers.

**MAJOR WORKER CHARACTERISTICS**

Knowledge of: oral & written communication tools & techniques; customer support & personal service technical writing & documentation practices; agency policy, procedures & applicable laws*; vision, mission & goals of agency*; mathematic principles relative to assigned area in IT; telecommunications; capabilities & applications of network equipment including hubs, routers, switches, bridges, servers, & related hardware; IT principles, methods & practices in assigned specialty area; software distribution tools & configuration management & mechanisms; organizations operation environment, topology, & protocols; local area & wide area networking principles & concepts; back-up & recovery techniques; performance monitoring methods; basic internet server maintenance techniques; installation & configuration procedures; internet clients, such as browsers & streaming video; system administration methods & procedures; operating systems installation & configuration procedures; technology design.

Skill in: reading comprehension; speaking; service orientation; installation; troubleshooting; critical thinking; operation monitoring; judgment & decision making; systems analysis; systems evaluations; operation analysis; identifying & specifying business requirements; using data recovery tools & techniques; systems evaluation; & complex problem solving.

Ability to: interact with users & staff in non-technical, clear terms; prepare meaningful, accurate & concise reports; stay current in emerging technologies in area of IT assigned; provide expert technical advice, guidance, & recommendations to management & other technical specialists on critical IT issues; & define problems, collect data, establish facts & draw valid conclusions.

(*)Developed after employment.

**MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT**

Completion of undergraduate core program or associate degree in computer science, information systems, mathematics, or related field, or equivalent work experience, and minimum 2 years combined work experience in any combination of the following: installation, removal, repair, & maintenance of electronic data processing equipment & devices. Minimum 2
years work experience in network administration may be substituted for the 2 years combined work experience referenced above.

- Or equivalent of Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT

UNUSUAL WORKING CONDITIONS
Work involves operating computer for long periods of time; overtime may be required; travel may be required which may include overnight stay; must be on-call 24 hours per day, 7 days per week; required to provide own transportation if state vehicle is not available. May work independently or in group project setting.
JOB DUTIES IN ORDER OF IMPORTANCE (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

At the intermediate level, performs: (1) advanced systems administration duties; (2) basic network administration duties; or (3) basic storage administration duties.

(1) With respect to advanced systems administration duties, incumbents ensure effective provisioning, configuration, installation, operation, & maintenance of system hardware, software, & related infrastructure. Ensures that system hardware & software, operating systems, & related procedures adhere to organizational & operational values, including the following:

- Performs daily monitoring to verify the availability & integrity of hardware, server resources, & systems processors.
- Performs security monitoring to identify possible intrusions.
- Performs & verifies daily backups were executed accurately, verifies recovery media was created & properly cycled; executes file archival & purging as required.
- Creates, maintains, & deletes user accounts as required.
- Repairs & recovers from hardware or software failures.
- Investigates issues & provides high level support.
- Installs new or rebuilds existing servers.
- Develops & maintains installation, configuration procedures, & system standards.
- Configures hardware, peripherals, services, settings, directories, & storage in accordance with standards, project, & operational requirements.
- Installs & configures systems that support organizational infrastructure & applications.
- Researches & identifies approaches that leverage existing resources & provide economies of scale.
- Applies operating system patches, upgrade tools & utilities, configures & adds new services as required.
- Configures, upgrades, & maintains system software & procedures that support applications, & operational needs.
- Performs periodic performance tuning & reporting to support capacity planning, hardware upgrades, resource optimization, & configures CPU, memory, & disk portioning as required.

OR:

(2) With respect to basic network administration duties, incumbents perform network tasks associated with the analysis, evaluation, & maintenance of Local, Wide & Metro area network systems, including the following:

- Configures network switches, routers, firewalls, VPN concentrators.
- Manages logging, monitoring, backups, maintenance, patches & upgrades, maintenance & support contracts, repair & replacement of network equipment.
- Specifies equipment for purchase, configure, test & install equipment.
- Manages access control lists for internal & external access control, & wireless network controllers & access point that provides access to agency personnel & guest access.

OR:

(3) With respect to basic storage administration duties, incumbents assist in the maintenance & operation of storage area networks data communications systems, including the following:

- Configures & administers Storage Area Networks & associated components, including fiber channel switch administration.
- Implements the installation of new storage hardware/software.
- Maintains storage aspects of new server integrations, storage allocation, & change management.

MAJOR WORKER CHARACTERISTICS

Knowledge of: oral & written communication tools & techniques; customer support & personal service; technical writing & documentation practices; agency policy, procedures & applicable laws*; vision, mission & goals of agency*; mathematic principles relative to assigned area in IT; telecommunications; capabilities & applications of network equipment including hubs, routers, switches, bridges, servers, & related hardware; IT principles, methods & practices in assigned specialty area; software distribution tools & configuration management & mechanisms; organizations operation environment,
topology, & protocols; local area & wide area networking principles & concepts; back-up & recovery techniques; performance monitoring methods; basic internet server maintenance techniques; installation & configuration procedures; internet clients, such as browsers & streaming video; system administration methods & procedures; operating systems installation & configuration procedures; technology design.

Skill in: reading comprehension; speaking; service orientation; installation; troubleshooting; critical thinking; operation monitoring; judgment & decision making; systems analysis; systems evaluations; operation analysis; identifying & specifying business requirements; using data recovery tools, techniques & systems evaluation; & complex problem solving.

Ability to: interact with users & staff in non-technical, clear terms; prepare meaningful, accurate & concise reports; stay current in emerging technologies in area of IT assigned; provide expert technical advice, guidance, & recommendations to management & other technical specialists on critical IT issues; & define problems, collect data, establish facts & draw valid conclusions.

(*)Developed after employment.

**MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT**
Completion of undergraduate core program or associate degree in computer science, information systems, mathematics, or related field, or equivalent work experience, and minimum 4 years combined work experience in network, database, server, or storage administration.

- Or two years of experience as an Infrastructure Specialist 1;

- Or equivalent of Minimum Class Qualifications For Employment noted above.

**TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT**

**UNUSUAL WORKING CONDITIONS**
Work involves operating computer for long periods of time; overtime may be required; travel may be required which may include overnight stay; must be on-call 24 hours per day, 7 days per week; required to provide own transportation if state vehicle is not available. May work independently or in group project setting.
JOB DUTIES IN ORDER OF IMPORTANCE (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

At the advanced level, performs: (1) advanced network administration duties; (2) advanced storage administration duties; or (3) database administration duties.

(1) With respect to **advanced network administration** duties, incumbents may perform advanced network engineering tasks associated with the planning, design, evaluation, selection, & complex maintenance of Local, Wide & Metro area network systems, including the following:

- Resolves complex network challenges while providing a network that is secure & resilient to interruptions or failures.
- Documents system configurations & network designs & prepares reports on network health & status of network.
- Makes recommendations based on best practices & new technologies.
- Recommends enhancements & configuration changes to improve & optimize network performance & efficiency.

OR:

(2) With respect to **advanced storage administration** duties, incumbents perform complex administration duties associated with the operation of storage area networks data communications systems, including the following:

- Oversees the implementation & participates in the selection of new storage hardware/software.
- Documents the policies & procedures to support the operational storage environment.
- Participates in the design & ongoing refinement of procedures & policies & prepares reports on storage administration best practices, new technologies, etc.

OR:

(3) With respect to **database administration** duties, incumbents may perform the following:

- Works with architecture, application development,& operations to help achieve a highly available database environment that meets current & future business objectives.
- Develops, tests, debugs, documents, & implements moderately complex hardware/software components, tools, & utilities including databases, middleware, & personal computer systems.
- Installs, maintains, configures, upgrades &/or administers hardware &/or software independently for data management systems (business intelligence, database engines, data transformation, data warehouses).
- Provides Tier II & Tier III database supports, (e.g., diagnose, analyze & resolve issues for customer(s)).
- Develops & maintains system documentation.
- Utilizes vendor-supplied &/or third-party utilities to monitor data management systems (e.g., business intelligence, database engines, data transformation, data warehouses).
- Conducts tuning to improve data management system performance.
- Develops, tests, selects & implements new technical solutions, products & servers as they relate to hardware/software operating systems & applications.
- Analyzes & tunes databases for optimal efficiency.
- Assists with backup, clustering, mirroring, replication & failover activities.
- Provides assistance in the areas of database security & the security of the data in the database.

MAJOR WORKER CHARACTERISTICS

Knowledge of: oral & written communication tools & techniques; customer support & personal service; technical writing & documentation practices; technology design; mathematic principles relative to assigned area in IT; IT principles, methods & practices in assigned specialty area; agency policy, procedures & applicable laws*, vision, mission & goals of agency*, systems performance management; IT lifecycle concepts; project management principles & methods; develop system specific specifications; back-up & recovery procedures; interrelationships of multiple IT specialties; database management principles & methodologies for data modeling.

Skill in: reading comprehension; speaking; service orientation; troubleshooting; critical thinking; using data recovery tools & techniques; complex problem solving, judgment & decision making; assuring quality; identifying & specifying business requirements; lead work; & database analysis & evaluation.

Ability to: interact with users & staff in non-technical, clear terms; prepare meaningful, accurate & concise reports; stay
current in emerging technologies in area of IT assigned; provide expert technical advice, guidance, & recommendations to management & other technical specialists on critical IT issues; & define problems, collect data, establish facts & draw valid conclusions.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT
Completion of undergraduate core program or associate degree in computer science, information systems, mathematics, or related field, or equivalent work experience, and minimum 6 years combined work experience in network, database, server, or storage administration.

- Or two years of experience as an Infrastructure Specialist 2;

- Or equivalent of Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT

UNUSUAL WORKING CONDITIONS
Work involves operating computer for long periods of time; overtime may be required; travel may be required which may include overnight stay; must be on-call 24 hours per day, 7 days per week; required to provide own transportation if state vehicle is not available. May work independently or in group project setting.
JOB DUTIES IN ORDER OF IMPORTANCE (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

At the expert level, incumbents may perform the most complex duties associated with advanced network administration or database administration (Infrastructure Specialist 3), & may oversee &/or coordinate activities of lower-level Infrastructure Specialists. Provides expert advice & guidance on regularly maintained or newly enhanced systems. May oversee the work of contractors & vendors. Serves as expert regarding emerging technologies, standards & techniques in advanced network administration or database administration.

MAJOR WORKER CHARACTERISTICS
Knowledge of: oral & written communication tools & techniques; customer support & personal service; technical writing & documentation practices; technology design; mathematic principles relative to assigned area in IT; IT principles, methods & practices in assigned specialty area; agency policy, procedures & applicable laws*; vision, mission & goals of agency*; systems performance management; IT lifecycle concepts; project management principles & methods; develop system specific specifications; back-up & recovery procedures; interrelationships of multiple IT specialties; database management principles & methodologies for data modeling.

Skill in: reading comprehension; speaking; service orientation; troubleshooting; critical thinking; using data recovery tools & techniques; complex problem solving, judgment & decision making; assuring quality; identifying & specifying business requirements; lead work; & database analysis & evaluation.

Ability to: interact with users & staff in non-technical, clear terms; prepare meaningful, accurate & concise reports; stay current in emerging technologies in area of IT assigned; provide expert technical advice, guidance, & recommendations to management & other technical specialists on critical IT issues; & define problems, collect data, establish facts & draw valid conclusions.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT
Completion of undergraduate core program or associate degree in computer science, information systems, mathematics, or related field, or equivalent work experience, and minimum 8 years combined work experience in network, database, server, or storage administration.

-Or two years of experience as an Infrastructure Specialist 3;

-Or equivalent of Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT

UNUSUAL WORKING CONDITIONS
Work involves operating computer for long periods of time; overtime may be required; travel may be required which may include overnight stay; must be on-call 24 hours per day, 7 days per week; required to provide own transportation if state vehicle is not available. May work independently or in group project setting.