

**STATE OF OHIO (DAS)**CLASSIFICATION  
SPECIFICATION**CLASSIFICATION SERIES**

Infrastructure Specialist

**MAJOR AGENCIES**

Attorney General only

**SERIES NUMBER**

6416AG

**EFFECTIVE**

11/30/2014

**SERIES PURPOSE**

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

**JOB TITLE**

Infrastructure Specialist 1

**JOB CODE**

64161AG

**PAY GRADE**

14

**EFFECTIVE**

11/30/2014

**CLASS CONCEPT**

The entry level class works under general supervision & requires considerable working knowledge of computer science or information technology to include network concepts (e.g., physical wiring, protocols & network typology), network operating systems, desktop operating systems including personal computer configurations, desktop protocol configurations & basic software configuration in order to respond to Information Technology Services issues on recurring basis (e.g., troubleshoot in-depth issues, communication errors between sites, across agency problems as opposed to isolated desktop issues; problems not limited to software &/or hardware) & evaluate & resolve reported problems.

**JOB TITLE**

Infrastructure Specialist 2

**JOB CODE**

64162AG

**PAY GRADE**

15

**EFFECTIVE**

11/30/2014

**CLASS CONCEPT**

The intermediate level class works under general direction & requires considerable knowledge of information technology to resolve complex infrastructure & systems problems & evaluate & resolve reported problems. Alternatively, performs basic network engineering tasks associated with area network systems, or performs effective provisioning, configuration, installation, operation, & maintenance of common system storage administration issues.

**JOB TITLE**

Infrastructure Specialist 3

**JOB CODE**

64163AG

**PAY GRADE**

16

**EFFECTIVE**

11/30/2014

**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.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Infrastructure Specialist 1	64161AG	47	11/30/2014	14

**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.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Infrastructure Specialist 2	64162AG	47	11/30/2014	15

**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 partitioning 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.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Infrastructure Specialist 3	64163AG	47	11/30/2014	16

**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.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Infrastructure Specialist 4	64164AG	47	11/30/2014	17

**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.