

OCCUPATIONAL GROUP: Information Technology

CLASS FAMILY: Systems and Infrastructure

CLASS FAMILY DESCRIPTION:

This family includes those positions that provide networking services involving the planning, analysis, architecture, design, development, testing, quality assurance, configuration, installation, implementation, integration, maintenance, and/or management of networked systems used in voice, data, LAN/WAN, and/or video formats. Positions in this family represent functional specialists that may be applicable depending on the need for highly specialized expertise and the size and scope of the organization. Work assignments often cross over into multiple functions and specialties which include, but are not limited to: Networking, Data Management, Systems Engineering and Systems Administration.

CLASS TITLE: Systems and Infrastructure Associate

DISTINGUISHING CHARACTERISTICS:

These positions, under general supervision, provide technical support for a statewide teleprocessing network. They assist terminal operators and resolve network malfunctions in person, by telephone or by contacting the appropriate vendor support specialist. At the job site, they install data/voice and fiber optic cabling to provide connectivity for end users, move/install equipment and terminals and serve as primary contact with users. Perform related work as required.

EXAMPLES OF WORK: *(Any specific position in this class may not include all of the duties listed; nor do the examples listed cover all of the duties which may be assigned.)*

- Pulling category 5E, category 6, and/or fiber optic cables; terminate and certify cables.
- Maintains daily work log; records user's down-time and maintains statistics on systems availability; turns log in for customer billing information.
- Operates diagnostic/monitoring equipment to detect and identify teleprocessing problems and attempts to resolve the difficulty; notifies the appropriate software or hardware specialist or vendor to make corrections when necessary.
- Installs or moves teleprocessing equipment and may assist in familiarizing users with the operation of the teleprocessing equipment, traces, replaces or lays teleprocessing cable.
- May perform duties of lead worker when out in the field; assist in schedule of cabling assignments; maintains cabling supply inventory; notifies supervisor when supplies need ordered.
- Receives calls via telephone from local and remote teleprocessing stations concerning control unit or printer problems, application problems, error codes, modem or line problems, outages, control unit reloading procedures, and systems or terminals down.

KNOWLEDGE, SKILLS AND ABILITIES:

- Knowledge of various network cabling conventions.
- Knowledge of teleprocessing concepts.
- Knowledge of error codes.
- Knowledge or proper resources and procedures available for teleprocessing problem resolution.
- Knowledge of the methods of operation and uses of teleprocessing equipment such as modems, terminals, transmission sets, and data analyzer.
- Knowledge of the diagnostic functions of all communications equipment.
- Knowledge of BICSI and WVOT standards for cabling.
- Skill to operate cable testers in order to certify cables or diagnose
- Ability to make decisions for cabling requirements for each job.
- Ability to accurately identify and, when possible, promptly correct teleprocessing errors or problems.
- Ability to lift up to one hundred pounds when moving or installing teleprocessing equipment.
- Ability to explain the operations of new teleprocessing equipment to users.

MINIMUM QUALIFICATIONS:

Education: High School Diploma or Equivalent

Experience: 1 - 2 years of full-time or equivalent part-time paid computer operations experience in a large scale computer installation, six months of which must have been primarily (fifty percent or more) involved in master console operations and six months in teleprocessing operations; OR one year of full-time or equivalent part-time paid experience in network installations or basic electronics.

Education & Experience Substitution: None

Certificates, Licenses, Registrations: None

CLASS TITLE: Systems and Infrastructure Specialist 1

DISTINGUISHING CHARACTERISTICS:

These positions perform entry level technical work in installing, supporting and maintaining systems at various agencies. They provide customer support and technology support to agencies and are responsible for the planning, installation and maintenance of network components for the department. Perform related work as required.

EXAMPLES OF WORK: *(Any specific position in this class may not include all of the duties listed; nor do the examples listed cover all of the duties which may be assigned.)*

- Supports end-users via telephone and/or site visit regarding system problems such as access or security, printer access and operations, server based and PC standalone applications, and/or general system(s) problems on LAN, mid-range system, and/or

access to other systems (for example WVOTC's mainframe, federal systems), internet access, private time-sharing computer services, or external dial-up/dial-in access to various systems.

- Uses diagnostic and/or monitoring software to identify problems and takes appropriate corrective action, either by repairing unit or contacting appropriate vendor.
- Plans, conducts or assists in group and one-on-one training of computer applications and operations software and proper use of hardware in the state data processing facility, excluding personal computer support.
- Develops training modules and instructional materials.
- Tests new hardware or operating software supplied by vendors to determine the scope of capabilities, accuracy of functions, and level of user literacy required to operate the system; writes documentation on hardware and software which have been tested in-house.
- Maintains detailed inventory of hardware and software.

KNOWLEDGE, SKILLS AND ABILITIES:

- Knowledge of capabilities and limitations of computers and related devices.
- Knowledge of local area and wide area networking, information processing and communications concepts and standards.
- Knowledge of PC, mini and mainframe operating systems.
- Knowledge of computer hardware, software and its terminology.
- Ability to clearly report activities and identify potential problem areas to manager.
- Ability to communicate clearly, both orally and in writing.
- Ability to compile information and interpret technical information in user friendly formats.

MINIMUM QUALIFICATIONS:

Education: Bachelor's degree from a regionally accredited college or university

Experience: 2 - 3 years of full-time or equivalent part-time paid experience in information processing, one year of which includes personal computer support and/or training.

Education & Experience Substitution: Three years of full-time or equivalent part-time paid personal computer or server support experience may be substituted for the required training.

Certificates, Licenses, Registrations: None

CLASS TITLE: Systems and Infrastructure Specialist 2

DISTINGUISHING CHARACTERISTICS:

These positions perform full-performance level work in providing Networking services and support to all state agencies. They primarily work on projects involving complex connectivity between departments, multiple locations and multiple platforms. These positions may specialize in an area of technical expertise such as networking technologies, data communications, hardware support, software support, training or information technology forensic examinations and conducting investigations of computerized accounting or other computerized records systems. Some position may have lead worker responsibilities. Perform related work as required.

EXAMPLES OF WORK: *(Any specific position in this class may not include all of the duties listed; nor do the examples listed cover all of the duties which may be assigned.)*

- Supports end-users via telephone and/or site visit regarding system problems such as access or security, printer access and operations, server based and PC stand- alone applications, and/or general system(s) problems on LAN, mid-range system, and/or access to other systems (for example WVOTC's mainframe, federal systems), internet access, private time-sharing computer services, or external dial-up/dial-in access to various systems.
- Uses diagnostic and/or monitoring software to identify problems and takes appropriate corrective action, either by repairing unit or contacting appropriate vendor.
- Participates in the review and/or production of automation plans; information technology and networking requests for hardware/software; reviews needs analysis and determines applications which could streamline the process; may meet with users to clarify work flow or procedures; researches alternative hardware/software which could further enhance the system; reports to superiors any problems with recommended course of action.
- Maintains agency networking documentation.
- Provide notification of outages to customers and Help Desk to keep them apprised of status; send emails, instant messaging, telephone, and Heat Call logging; follow up with Internet Service Providers on network outages.
- Maintain network backup tool and administer the server it runs on; keep server operating system updated and virus definitions up to date.

KNOWLEDGE, SKILLS AND ABILITIES:

- Knowledge of capabilities and limitations of computers and related devices.
- Knowledge of local area and wide area networking, information processing and communications concepts and standards.
- Knowledge of the operations of LAN management software and/or operating systems software, application software and PC tools.
- Knowledge of PC, mini and mainframe operating systems.
- Ability to analyze and evaluate work environments, computer systems, user requirements and information processes.
- Ability to evaluate complex information systems and understand their structure, component parts and inter-relations.
- Ability to clearly report activities and identify potential problem areas to manager.
- Ability to communicate clearly, both orally and in writing.
- Ability to analyze information problems and apply technical information solutions.
- Ability to compile information and interpret technical information in user friendly formats.

MINIMUM QUALIFICATIONS:

Education: Bachelor's degree from a regionally accredited college or university

Experience: 3 - 4 years of full-time or equivalent part-time paid personal computer or server support experience may be substituted for the required training. Successful completion of twelve credit hours or the equivalent thereof of industry recognized authorized/certified LAN administration, network service/support and/or network technologies training may substitute for one year of the required training.

Education & Experience Substitution: None

Certificates, Licenses, Registrations: None

CLASS TITLE: Systems and Infrastructure Specialist 3

DISTINGUISHING CHARACTERISTICS:

These positions perform advanced level professional/technical consulting work in designing, selecting, installing, implementing and maintaining complex network systems. They work on projects involving connectivity between various locations and systems, and projects involving connectivity to other various federal and state systems or other external systems. These positions may act as team leader or supervisors and may have budgetary responsibility. Perform related work as required.

EXAMPLES OF WORK: *(Any specific position in this class may not include all of the duties listed; nor do the examples listed cover all of the duties which may be assigned.)*

- Responsible for the management of daily administration, configuration, upgrade and maintenance of systems, including databases, data storage backups and infrastructures.
- Utilize various tools to monitor the performance of the overall system and the numerous database subsystems. Address system or database problems as they are identified from various sources.
- Install and configure various software packages for use on the enterprise server and the Linux IFL.
- Apply maintenance, implement new features, and tune various software packages on the enterprise server and the Linux IFL.
- Coordinates activities of staff members in support of complex networks - Local/Wide Area Networks, mid-range systems, PC and mainframe operations. Operates diagnostic and/or monitoring equipment/software to identify problems and takes appropriate corrective action, either by repairing unit or contacting appropriate vendor.
- Installs and configures hardware and software.
- May supervise a technical team that monitors and maintains IT systems and infrastructure.
- May act as Project leader of a technical team that monitors and maintains IT systems and infrastructure.

KNOWLEDGE, SKILLS AND ABILITIES:

- Knowledge of installing, configuring, administering and maintaining systems and infrastructure hardware and software.

- Knowledge, skills and abilities in installing, configuring, administering and maintaining Microsoft Windows Server (all versions) and architecting and implementing Industry Standard Architecture Server Solutions.
- Knowledge of Storage Area Networks, Storage Protocols, Storage Technologies and Knowledge of JCL (Job Control Language), SMP/E (System Modification program/Extended), ISPF (Interactive System Productivity Facility), various mainframe programming languages (COBOL, Assembler, etc.), various file systems (VSAM, seq., etc.), various relational databases (DB2, Oracle, etc.)Storage Hardware.
- Ability in architecting and implementing Storage solutions.
- Ability to manage projects.
- Ability to provide Customer Service.
- Ability to supervise the work of employees.
- Ability to understand and apply information of a highly technical nature from a variety of resources
- Ability to create usable, highly technical documentation.

MINIMUM QUALIFICATIONS:

Education: Bachelor’s degree from a regionally accredited college or university

Experience: 4 - 5 years of full-time or equivalent part-time paid experience in information processing field or systems programming

Education & Experience Substitution: None

Certificates, Licenses, Registrations: None

CLASS TITLE: Systems and Infrastructure Specialist 4

DISTINGUISHING CHARACTERISTICS:

These positions serve as technical advisors on network issues. They are responsible to design, engineer, implement, maintain, secure and troubleshoot data, voice and video LAN/WAN wireless, remote access networks. These positions perform the most advanced professional/technical work associated with bridging user requirements with the capabilities of an information system. They may exercise supervisory and managerial responsibilities over teams of network professionals working with hardware, software and communication networks. Perform related work as required.

EXAMPLES OF WORK: *(Any specific position in this class may not include all of the duties listed; nor do the examples listed cover all of the duties which may be assigned.)*

- Maintain State agency and backbone infrastructure; troubleshoot network outages, connectivity issues, and moves/adds/changes.
- Assist network engineers and field techs with issue resolution when needed.
- Coordinate and/or delegate activities of staff members in support of complex networks-LANS/WANS.

- Attend meetings with State agency representatives and Office of Technology representatives to recommend and design infrastructure solutions for data/communication needs.
- Interface with service providers to ensure WAN communication projects go smoothly and hardware is configured correctly.
- Meet with other Office of Technology groups to help determine bandwidth and capacity needs for execution of Office of Technology initiatives.

KNOWLEDGE, SKILLS AND ABILITIES:

- Knowledge of LAN/WAN network design, interoperability, routing protocols, industry standards, protocols, switching, VLANs, voice, wireless, security, and remote ac design and implementation.
- Knowledge of telecommunications standards, protocols, and medium. Industry standards for infrastructure.
- Knowledge of networking, information processing and communication concepts and standards.
- Knowledge of tools and techniques as applied to writing, modifying, and documenting systems.
- Knowledge of advanced principles of network design and testing procedures.
- Knowledge of data communications, theory, protocols, industry standards and terminology.
- Knowledge of electronics and electricity, and communications technology and terminology.
- Ability to analyze and evaluate work environment, computer systems, user requirements and information processes.
- Ability to compile information and interpret technical information for non-technical staff in a user friendly format.
- Ability to develop/design/implement information system based solutions in a wide range of problem domains.
- Ability to diagnose and resolve technical problems involved in supporting and maintaining a highly complex network environment.
- Ability to make decisions and use independent judgment in resolving technical issues associated with maintaining a complex information network.

MINIMUM QUALIFICATIONS:

Education: Bachelor's degree from a regionally accredited college or university

Experience: 8 - 9 years of full-time or equivalent part-time paid experience in information processing field, of which; two years of experience must be in: local area network administration and support or networking standalone/ mainframe, minicomputer, and LAN/WAN connectivity; or of which two years of experience must be in installation of hardware and software, support, and or training.

Education & Experience Substitution:

Four years of full-time or equivalent part-time personal computer or server LAN/WANT paid experience may be substituted for the required training on a year for year basis.

OR

Three years of full-time or equivalent part-time paid experience as an Information System Specialist 3 in the State of West Virginia.

OR

Successful completion of twelve (12) credit hours or the equivalent industry recognized authorized/certified LAN/WAN administration may be substituted for one year of training.

OR

Network service/support and/or network technologies training may substitute for one year of the required training requirement.

Certificates, Licenses, Registrations: None

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