STATE OF WISCONSIN
CLASSIFICATION SPECIFICATION

INFORMATION SYSTEMS
NETWORK SERVICES CLASSIFICATIONS

I. INTRODUCTION

A. Purpose of This Classification Specification

This classification specification is the basic authority under Wis. Admin. Code ER 2.04 for making classification decisions relative to present and future positions, which perform professional Information Systems (IS) Network Services duties for the majority of time. There are four classification levels within this one classification specification, and they are: IS Network Services Professional, Senior, Specialist, and Consultant/Administrator.

Classification decisions must be based on the "best fit" of the duties within the existing classification structure. The "best fit" is determined by the majority (i.e., more than 50%) of the work assigned to and performed by the position when compared to the class concepts and definition of this specification or through other methods of position analysis. Position analysis defines the nature and character of the work through the use of any or all of the following: definition statements; listing of areas of specialization; representative examples of work performed; allocation patterns of representative positions; job evaluation guide charts, standards or factors; statements of inclusion and exclusion; licensure or certification requirements; and other such information necessary to facilitate the assignment of positions to the appropriate classification.

B. How to Use This Classification Specification

This classification specification includes professional IS Network Services positions at the Professional, Senior, Specialist, and Consultant/Administrator classification levels, as defined in Section II of this specification. The IS Network Services classifications include numerous allocation patterns or job types.

If a majority of a position's time is identified in any one of the individual classification definitions, then the position must be classified in that particular classification. Positions which spend no more than 50% of their time on duties in any other single professional IS Data Services, IS Network Services, IS Systems Development Services, IS Technical Services, or IS Business Automation classification, and more than 50% of their time on a combination of duties from two or more of these IS classifications, should be classified in one of the IS Comprehensive Services classifications.

Section II.A. defines duties performed by positions appropriately included in this job family. Use this section to determine the correct job family classification. Then, use sections II.B. and II.C. to determine the appropriate classification level within that job family classification for the position: Professional, Senior, Specialist, or Consultant/Administrator.

For classification purposes, the majority of duties assigned to a position **must** meet level **and** classification definition.

C. Inclusions

This specification encompasses those professional IS Network Services positions located within State of Wisconsin agencies, District or Regional Offices of agencies, Boards and Institutions and

University of Wisconsin Campuses. Positions in this classification series are responsible for IS Network Services as defined by the level, job group, and classification definition.

D. Exclusions

Excluded from this series are the following types of positions:

1.   Supervisor positions as defined in Wis. Stats. 111.81(19), and as administered and interpreted by the Wisconsin Employment Relations Commission.

2.   Positions which are not engaged for the majority of time in "professional employee" work as defined in Wis. Stats. 111.81(15)(a) or (b), and as administered and interpreted by the Wisconsin Employment Relations Commission.

3.   Positions which do not spend the majority of their time (50% or more) performing duties identified in the IS Professional and Senior classification definitions.

4.   Clerical, paraprofessional or professional positions which utilize computer systems in a business area, specialized program or reporting area and which are concerned with the manipulation of data contained in the system, and with responsibilities including program policy development and/or implementation, inputting of data into the system, correcting or modifying data, generating program reports and statistics, evaluating the effectiveness of the system, and providing information and technical assistance to users of the program system and liaison with IS professional staff. The primary purpose of these positions and the majority of the assigned duties are not the development or maintenance of the computer system.

5.   IS (IS) Technician positions which spend the majority of time (more than 50%) engaged in any combination of the following activities: operating and monitoring a computer and/or teleprocessing network; routine computer programming and debugging; controlling data by coordinating and executing computerized system production runs; operating peripheral equipment; installing, maintaining, repairing and servicing computer hardware; installing software and upgrades and assisting with troubleshooting software and hardware problems; providing routine technical assistance; performing technical related work in the day-to-day maintenance of the LAN or WAN; completing data processing production for major, complex, integrated systems; or providing first level technical problem determination and resolution, and related job duties.

6.   Positions engaged in DOA enterprise level IS work for the majority of the time.

7.   All other positions which are more appropriately identified by other classification specifications.

E.   Entrance Into and Progression Through This Series

Employees enter positions within this classification series by competition. Progression to the IS Network Services Senior level will occur through reclassification. A progression series means a classification grouping whereby the class specifications specifically identify an entry and full performance senior level. The full performance senior level within a progression series means the classification level that any employee could reasonably be expected to achieve with satisfactory performance of increasingly complex duties or the attainment of specified training, education, or experience.

An employee may have his/her senior level position considered for reclassification from the IS Network Services Senior classification to the IS Network Services Specialist classification. All other employees will enter positions within this classification series by competition.

A position assigned to the IS Network Services Consultant/Administrator classification is the principal technical authority for an agency or campus in the assigned IS area. Employees will enter IS Network Services Consultant/Administrator positions by competition. When circumstances permit on a case-by-case basis, an employee may enter a position in the IS Network Services Consultant/Administrator classification by reclassification.

F.	Definition of Information Systems Terms

To assist in the evaluation of positions for inclusion in this and other Information Systems classifications, definitions of IS related terms are provided in a document titled "Information Systems/Technology Definitions" which is incorporated herein by reference as though fully set forth. This document should be used with the classification specifications which have Information Systems or Information Technology as part of the class title.

## II.	DEFINITIONS

A.	Identifying the Correct Job Family Classification

This section defines duties performed by positions appropriately included in this job family.

No specific definitions are provided for the IS Comprehensive Services classifications because these positions spend no more than 50% of their time on duties in any other single professional IS Data, IS Network Services, IS Systems Development Services, IS Technical Services, or IS Business Automation classification, and more than 50% of their time on a combination of duties from two or more of these IS classifications.

Network Services Job Family

The Network Job Family covers those positions which plan, analyze, design, develop, test, configure, implement, integrate, maintain, and manage computer networks used for the transmission of information in voice, data, and/or video formats. The family covers all aspects of network, including file service, print service, local and Internet electronic mail networks, Internet web connectivity and mainframe gateways. Position types include network administrator, LAN/WAN administrator, server administrator, network analyst, network designer, etc. Staff occupying positions in this family have the experience to analyze, design, develop, implement, and maintain the network technology needs of the agency business areas as well extra-and inter-agency requirements. Telecommunication system (including telephones, ISDN telephones, automated call systems, PBXs, etc.) needs analysis, design, implementation, and maintenance are included in this family.

Positions which spend the majority of their time (50% or more) on one or more of the following duties are appropriately included in the IS Network Services job family classifications:

1. Design networks and telecommunications facilities (Lower levels will assist.).
2. Install, configure, monitor, tune and troubleshoot network and desktop operating systems, and other system (including security) software and network hardware.
3. Administer access to network and telecommunication resources.
4. Maintain and ensure availability of centralized, decentralized, and remote network services.
5. Responsible for all aspects of network, including file service, print service, local and Internet electronic mail networks, internet web connectivity, and mainframe gateways.
6. Develop policies, procedures and standards to ensure network reliability and accessibility (lower levels participate).
7. Document network and telecommunication architectures, configurations, performance, problems and assets.
8. Research, test, and make recommendations for new, emerging, and/or upgraded network and telecommunication software and hardware. Understand and resolve integration issues.
9. Plan, arrange and monitor installation and operation of communication capabilities.
10. Responsible for network capacity planning and monitoring network and telecommunication capacity, load balances and performance of servers and telecommunication devices (such as hubs, switches and routers) and make necessary adjustments to ensure adequate network performance and throughput and to minimize downtime.
11. Plan and manage changes to the network and telecommunication facilities (such as but not limited to upgrades).
12. Establish requirements and specifications for network and telecommunication hardware and software standards and acquisitions and develop bid specifications for these services and equipment.
13. Provide expert consultation and problem solving to desktop support staff, application design and development, external third parties, and end-users with respect to the impact on the network.
14. Maintain network directories and network access structures.
15. Backup and recover network servers (lower levels will assist).
16. Install, configure, and tune the network to maximize performance.
17. Establish, maintain and use remote management facilities (including software distribution, remote control, and remote inventory) for workstations and servers.
18. Internet firewalls: Specify, acquire, install, configure, monitor, and manage internet firewalls.
19. Manage internet intrusion detection.
20. Configure protocols for Wide Area Network (WAN) and/or Local Area Network (LAN) that run on network layers, such as IP, IPX, Appletalk, UDP, etc.
21. Analyze and troubleshoot network problems.
22. Investigate new service technologies and ability to integrate with existing network systems.
23. Implement and troubleshoot remote access services, including DSL, cable, modem and wireless.
24. Configure high-end network equipment, including routers and switches.
25. Provide backbone network services to multiple departments or units.
26. Coordinate technical aspects of services between network or telecommunications service providers and institutional entities.
27. Coordinate with other government agencies to optimize use of WAN network topology.
28. Lead capacity planning process to ensure timely and cost effective advancement of Wide Area Networks (WANs).

Positions appropriately classified in the IS Network Services job family classifications may perform some of the following duties, but would not spend the majority of their time on these duties:

1. Use hardware and software of a network to perform business functions.
2. Use hardware and software of a network to perform IT functions other than network services.

3. Develop application software.
4. Authorize access to network or network databases.
5. Use existing data structures to answer business questions.
6. Use reporting tools to answer business questions.
7. Participate in building or review of data models as a business representative.
8. Use network policy, standards, guidelines, or procedures in the day to day operations.
9. Install network or communications wiring or devices.
10. Procure any of the above items.
11. Perform low-level network troubleshooting or detection, including monitoring traffic levels or loads or equipment replacement.
12. Write or process voice or data network service orders.
13. Use network hardware or software to perform business functions or activities related to one's primary job functions.

B. Levels

IS PROFESSIONAL

This classification is used as an entry progressing to a development level for professional IS positions. Work is performed under close progressing to limited supervision. Although this is the entry-developmental level for this series, knowledge of fundamental IS concepts, principles and practices must have been acquired before appointment into this classification; the focus is on learning the procedures, practices, techniques and technology for the assigned specialized area; and assignments are narrow in scope. As the employee progresses, s/he continues to develop knowledge of the specialized area and the associated IS concepts, principles, practices, and techniques.

IS SENIOR

Positions at this level work under general supervision. The technical work performed by a position at this level may be reviewed by the position's assigned supervisor for agreement with the agency's or campus' established technical direction, policies and standards. This is the full performance level, and it is the level that an employee in this series can reasonably expect to attain. An employee at this level has acquired a broad knowledge of general IS concepts, principles, practices and techniques **and** broad knowledge of the job family and classification to which the position is assigned. Positions at this level may lead positions at the Professional and Senior level in the completion of projects and work assignments. Positions at this level may support the activities of IS Specialists, Consultants, and/or Administrators and may work under the day-to-day direction of IS Specialists, Consultants, and/or Administrators.

IS SPECIALIST

Positions at this advanced level work under general review with objectives and priorities established by overall work unit directives. There is little review of technical recommendations and solutions by a supervisor. Positions at this level will assist Information Systems Consultants/Administrators and management by implementing technical policies, standards and procedures which impact on agency/campus IS functions. The employee possesses and applies comprehensive knowledge of agencywide/campuswide IS architectures as well as IS concepts, principles and practices in the specialized functional area. The position independently resolves conflicts and problems through the skilled application of theoretical and practical knowledge of the specialized area as well as the application of general policies and agencywide/campuswide IS policies and standards. Work

assignments are difficult and complex and focus on IS as defined under the Classification Definitions section of this specification. Positions at this level interact with agency or campus business managers and IS customers as well as other professional IS managers and staff in the completion of assigned duties.

IS CONSULTANT/ADMINISTRATOR

A position at this level works under broad policy guidance and is regarded as an agency's or the campus' technical expert in this classification. A position covered by this specification is considered the definitive technical authority in the referenced IS area for the assigned agency or campus. Work performed by a position in one of these classifications must focus, for a majority of the time, on the IS area of expertise and will perform the most advanced level of work which requires the application of a combination of the highest levels of theoretical and practical knowledge in the specialized IS classification. Technical review is based on the effectiveness of the problem resolution and consultation provided. A position at this level provides direction, guidance and consultation on IS technical issues specific to the area of expertise to the agency's or campus' administrators, business managers, IS managers, IS specialist and professional positions. Actions by a position at this level result in establishing technical policies, parameters and standards on an agencywide or campuswide basis for the identified classification. Positions at this level will interact with IS staff in other agencies and/or campuses. Positions covered by this specification represent the agency/campus on enterprisewide committees/task forces and serve on interagency or intercampus study and/or advisory groups.

C. Classification Definitions

IS NETWORK SERVICES PROFESSIONAL

This classification is used as an entry progressing to a development level for professional IS Network Services positions. Work is performed under close progressing to limited supervision. Positions spend the majority of their time performing any combination of the following duties:

- Support agency internet access.
- Monitor and maintain appropriate firewall security.
- Work with vendors on the installation and maintenance of network software and hardware.
- Assist with the diagnosis and resolution of problems related to internet applications and systems software and/or hardware (may include gateways, hubs, routers, servers, and bridges) and communications between connected computer platforms.
- Perform capacity monitoring with common, recognized tools.
- Assist with projects for the network and/or server configuration.
- Administer LAN security at the direction of the agency/campus Security Officer.
- Perform network configuration file backup.
- Provide access to network file services at the direction of the agency/campus Security Officer.
- Consult with end users and Help Desk Staff on LAN hardware and software changes/problem definitions.
- Support established operational Local Area Networks (LAN) and/or Wide Area Networks (WAN) or assigned aspects of established, operational mainframe networks.
- Monitor operation of the networks.
- Install and maintain LAN/WAN connectivity media.
- Support telecommunications technology and network related functions to ensure adequate telecommunications resources are available to the agency and its customers.

- Procure new telecommunications services and hardware.
- Provide problem resolution for telephone and voice mail system hardware, wireless equipment, and telephone company services.
- Implement telecommunications practices and procedures to manage customer needs.
- Use telecommunications programming techniques to configure telecommunications services.

IS NETWORK SERVICES SENIOR

Positions in this classification perform professional IS work related to software, hardware and connectivity which supports the functions of computers in network configurations. Networking considerations addressed by positions in this classification may include assisting Network Administrators with projects for network design and maintenance, problem/change management and definitions, installation and maintenance of network and/or server software. Positions in this classification support networks and/or servers for a majority of the time. Senior level positions spend the majority of their time performing any combination of the following duties:

- Design and install agency internet access.
- Install appropriate firewall security.
- Ensure backup of files required for network configuration/recovery.
- Coordinate projects for installation and maintenance of vendor releases of network and/or server software.
- Install LAN's and/or WAN's.
- Diagnose and resolve problems related to applications and systems software and/or hardware (may include gateways, hubs, routers, switches, servers, and bridges) and communications between connected computer platforms.
- Monitor and control production systems and support equipment, activities, and performance for mainframe networks as well as perform problem determination for the network.
- Implement LAN Hardware and software changes.
- Participate in the design of LAN's and/or WAN's.
- Coordinate the use of LAN/WAN connectivity media.
- Investigate and diagnose problems related to telecommunications.
- Coordinate the installation and delivery of voice telecommunications hardware and software.
- Participate in the design of new telecommunications services and hardware.
- Install, program, and maintain telecommunications equipment.
- Assist Network Services Specialists and/or Consultants with their responsibilities.

This classification includes, but is not limited to, the following representative positions or job types. Positions do not need to exactly match one of these representative positions in order to be appropriately classified at this level.

<u>Representative Positions</u>

<u>IS Internet Support Senior</u> - Positions design, install, and support agency internet access; install, monitor, and maintain appropriate firewall security; monitor operation of the internet access, Web servers, and firewalls; and oversee installation of relevant software and hardware and maintenance by vendors. Positions may install, diagnose and resolve problems related to internet applications and systems software and/or hardware (may include gateways, hubs, routers, servers and bridges) and communications between connected computer platforms.

IS Local Area Network (LAN) Coordinator - Positions are responsible for supporting all aspects of a LAN. Applications supported by the LAN are standard word processing, spreadsheet, electronic mail/calendaring, database management packages, and other types of applications. The supported LAN uses established systems and network software. Diagnostics and capacity monitoring are performed with common, recognized tools. Positions assist with projects for the network and/or server configuration, monitor usage, manage security and storage capacity, ensure backup of files, provide access to files and consult on LAN hardware, software, changes/problem definitions. Positions coordinate projects for installation and maintenance of vendor releases of network and/or server software.

IS Network Support Senior - Positions are responsible for supporting established, operational Local Area Networks (LAN) and/or Wide Area Network/s (WAN) or assigned aspects of established, operational mainframe networks. Positions may also be responsible for designing and installing LAN's or WAN's; may install, diagnose and resolve problems related to applications and systems software and/or hardware (may include gateways, hubs, routers, switches, servers and bridges) and communications between connected computer platforms; and monitor operation of the networks and oversee installation of network software and maintenance by vendor as assigned. Mainframe positions also monitor and control production systems and support equipment, activities, and performance for mainframe networks as well as perform problem determination for the network.

IS Telecommunication Senior - Positions provide telecommunications facility planning, design, configuration management, consulting and support to the Agency. Duties include support of Telecommunications technology and network related functions to ensure adequate telecommunications resources are available to the agency and its customers. Positions have in-depth knowledge of the telecommunications field and are responsible for the full scope of agency telecommunication systems.

IS NETWORK SERVICES SPECIALIST

Positions in this classification perform advanced professional IS work related to software, hardware and connectivity which supports the functions of computers in network configurations. Networking considerations addressed by positions in this classification may include coordinating network design and maintenance for assigned agency/campus customers with the LAN Project Manager, Network Administrator, or IS Supervisor and coordinating projects for network problem/change management and definitions, installation and maintenance of network and/or server software through the management of IS Network Professionals. Positions in this classification work with and support data networks for a majority of the time. Positions in this classification spend the majority of their time performing any combination of the following duties:

- Coordinate the operation of agency/campus LANs with Wide Area Network (WAN) connectivity.
- Direct IS Professionals or Technicians in the performance of systems diagnostics and capacity monitoring.
- Oversee the network configuration and manage security.
- Develop backup and recovery procedures for network configurations.
- Provide direction on LAN hardware and software changes/problem definitions.
- Coordinate the installation and maintenance of vendor releases of network software.
- Develop and support Local Area Networks (LAN) and/or Wide Area Networks (WAN).

- Configure or assist in the configuration of networks.
- Coordinate the installation of networks on multiple agency/campuswide basis.
- Diagnose and resolve complex problems related to computer network software, applications and system software and/or hardware (may include gateways, hubs, routers, switches, servers, and bridges) and communications between connected computer platforms.
- Analyze network capacity data and usage.
- Consult with the agency/campus Security Officer on LAN/WAN security.
- Identify and resolve network capacity issues.
- Consult with IS Staff on LAN hardware, software, changes/problem definitions.
- Develop and implement solutions to network traffic problems.
- Coordinate and ensure the installation of network software and maintenance by vendors.
- Design LANs or WANs.
- Develop and implement network management tools for network performance and traffic analysis.
- Coordinate network monitoring and operation.
- Implement firewall configurations .
- Develop telecommunications practices and procedures to manage customer needs.
- Work with other IS staff to ensure integration of telecommunications services and consistency across architectures.
- Recommend Computer Telephony Integration solutions to meet customer needs.
- Work with IS Staff, customers, and vendors to coordinate the delivery of telecommunications services.

This classification includes, but is not limited to, the following representative positions or job types. Positions do not need to exactly match one of these representative positions in order to be appropriately classified at this level.

Representative Positions

IS LAN Specialist - Positions are responsible for all aspects of the coordination, operation and overview of agency/campus LANs with Wide Area Network (WAN) connectivity. Applications supported by the LAN will be standard word processing, spreadsheet, electronic mail/calendaring, database management packages **and** unique applications which support the agency/campus critical business. Positions direct IS Professionals or Technicians in the performance of systems diagnostics and capacity monitoring. Positions oversee the network configuration, monitor usage, manage security and storage capacity, ensure backup of files, provide access to files and direction on LAN hardware, software, changes/ problem definitions. Work performed includes the coordination of installation and maintenance of vendor releases of network software.

IS Network Specialist - Positions are responsible for developing and supporting Local Area Networks (LAN) and/or Wide Area Network/s (WAN). Positions configure or assist the Network Administrator in the configuration of networks, coordinate the installation of networks on multiple agency/campuswide basis, diagnoses and resolution of complex problems related to computer network software, applications and systems software and/or hardware (including gateways, servers and bridges) and communications between connected computer platforms. Positions oversee and monitor usage, manage security and storage capacity, ensure backup files, provide access to files and consult on LAN hardware, software, changes/problem definitions; and develop and implement solutions to network traffic problems and ensure the installation of network software and maintenance by vendors.

IS NETWORK SERVICES CONSULTANT/ADMINISTRATOR

Positions in this classification perform the highest level professional IS work related to the management of the software, hardware and protocols which support the functions of all networks in an agency/campus. Networking considerations addressed by positions in this classification include ensuring that agency/campus network policies and standards support the agency/campus business needs and that agency/campus policies are consistent and compatible with enterprisewide networking technical standards and policies. Networks for which work at this level is performed will include Local Area Networks and Wide Area Networks. Positions spend the majority of their time performing any combination of the following duties:

- Develop and administer the agency/campus technical policies, standards, designs, requirements and procedures which impact on all voice, data, and video networks, network hardware, software, and protocols for that agency/campus/enterprise.
- Ensure compliance across all teams and projects with agency/campus/enterprise networking policies, procedures, and standards as well as enterprisewide standards which may impact on the project.
- Provide Network Services consulting responsibility for top management positions, e.g. Division Administrators, Department Heads, University Deans, Chancellors, and/or similar level federal officials.
- Provides network status reports and recommendations to management.
- Administer the vendor contracts for the managed projects.
- Ensure through planning that network capacity and flexibility support all agency/campus/ enterprise requirements.
- Lead agency/campus/enterprise network projects through Network Specialist and or Network/Professional staff.
- Positions are the definitive technical authority for network resource questions, concerns and problem resolution.
- Design firewall configuration in coordination with agency/campus Security Officer.
- Coordinate support through other IS staff.
- Positions are the principal technical authority for the network and associated voice, date and video communications hardware and software.
- Plan and design network configurations.
- Evaluate network performance and capacity.
- Develop long-range network plans and objectives.
- Plan for future expansion for network hardware and software.
- Develop network configuration backup and recovery plan.
- Plan the use of LAN/WAN network connectivity media.
- Provide telecommunications facility planning.
- Design the agency/campus telecommunications complex.
- Consult on the use of telecommunications services.
- Positions are the primary, definitive technical expert in voice communications.
- Evaluate and recommend telecommunications technologies.
- Provide technical direction for telecommunications technologies.

This classification includes, but is not limited to, the following representative positions or job types. Positions do not need to exactly match one of these representative positions in order to be appropriately classified at this level.

Representative Positions

IS Local Area Network (LAN) Project Manager - Positions must coordinate teams working on two or more LAN, WAN and/or server development projects **or** two or more teams working on a single project with multiple aspects from inception to completion. A team will be composed of IS Network Services Specialists, IS Network Services Professionals, business area managers, project vendors and other IS areas as required. Positions ensure compliance across all teams and projects with agency/campus networking policies, procedures and standards as well as enterprisewide standards which may impact on the project. This position manages all phases of assigned projects; plans and budgets for work flow and product deliveries, manage human and fiscal resources; effectively negotiates timelines, products and other project concerns with top management positions, e.g., Division Administrators, Department Heads, University Deans, Chancellors, and/or similar level federal officials to attain project goals; and oversees completion of tasks and provide status and completion reports to management. Positions may administer the vendor contracts for the managed projects

IS Network Administrator - Positions develop and administer the agency/campus technical policies, security policies, standards and procedures which impact on all networks, network hardware, software and protocols for that agency/campus. Work ensures internal and external network protocols are established and maintained. Decisions by positions ensure compliance and compatibility with enterprisewide standards. Positions ensure through planning that network capacity and flexibility support all agency/campus requirements, and manage and lead agency/campus network projects through Network Specialist and/or Network Professional staff. These positions are the agency/campus definitive technical authority for network resource questions, concerns and problem resolution.

III. QUALIFICATIONS

The qualifications required for these positions will be determined at the time of recruitment. Such determinations will be made based on an analysis of the goals and worker activities performed and by an identification of the education, training, work, or other life experience which would provide reasonable assurance that the knowledge and skills required upon appointment have been acquired.

IV. ADMINISTRATIVE INFORMATION

These classifications were created as a result of the Information Systems Survey effective March 30, 1997 and the abolishing of the Management Information Specialist 1 through 7 series as announced in Bulletin CC/SC-64. The classifications created more accurately represent the actual duties of the positions in the survey.

The IS classifications were collapsed and semi-automatic pay progression IS classes were created effective December 31, 2000 and announced in Bulletin CLR/SC-124.

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