Information Technology Series
Network Analyst

CLASSIFICATION OVERVIEW

Positions in this classification are primarily responsible at varying levels for the design, installation, ongoing analysis, administration, and/or control of voice, data, and video networks, and/or distance learning technologies. Work includes the design, engineering, programming, monitoring, and maintenance of wide area or local area networks or comparable transmission networks to meet user needs and maximize remote computing, telecommunications, or transmission capabilities.

Positions in this classification may reside in the central computing department, instructional media areas, or in the telecommunications department. Network Analyst positions may also be located in administrative or academic departments based on need and the complexity of the network system. Common working titles may include Network Analyst, Network Specialist, Network Consultant, Telecommunications Engineer, Network Administrator, Telecommunications Analyst, etc.

ENTRY QUALIFICATIONS

To enter this classification, a basic foundation of knowledge and skills in technical, information network systems is a prerequisite. This foundation would normally be obtained through a bachelor's degree in computer science, engineering, industrial technology, telecommunications or a related technical field, or equivalent training and experience. Foundation knowledge and skills for the Network Analyst include a basic knowledge of telecommunications and transmission technologies, including network architecture, topologies, protocols, programming applications and interfaces appropriate to the defined work area and assignments. Based on specialized assignments, a position may also require background, and/or licensure if required, in computer operating systems, broadcast network functions, or telecommunication switching systems.

Further progress within this classification is based on department need and work assignments requiring higher levels of skills and knowledge. ***Reference the Information Technology Series Introduction for level definitions.***

CORE FUNCTIONS

The core functions for the Network Analyst are:

- Network Planning and Implementation
- Network Analysis and Management
- Network Administration and Support

These core functions represent major categories of work within the Network Analyst classification. Typical activities and core skills for each core function cited below are illustrative; campus assignments may vary.

Core Function – Network Planning and Implementation

Typical Activities

Design and Configuration: Design and engineer network installations to meet information processing and traffic needs. Examples of typical work activities include:

- Develop systems and/or network configurations, including hardware, software, and integration requirements;
- Plan, design, and engineering of assigned networks;
- Determine network architecture, topology, and transmission media appropriate for the installation;
- Develop/recommend network standards and protocols;
- Design networked facilities (e.g., studios, classrooms, teleconference facilities);
- Design terrestrial or satellite microwave transmission systems.

Evaluation/Research; Evaluate user needs, systems, and new technologies to recommend the most effective communication and transmission systems. Examples of typical work activities include:

- Research and evaluate network/systems, performance capacity, and compatibility with existing systems;
- Analyze information processing, transmission, and data movement needs;
- Analyze system elements such as system cabling and software and expansion capacity;
- Evaluate software/hardware network features;
- Coordinate network development activities with systems as appropriate;
- Act as the technical liaison for network product or system vendors.

CORE SKILLS
NETWORK PLANNING AND IMPLEMENTATION

Knowledge of network architecture, configuration, protocols, and interconnectivity requirements for internal/external information transmission.

Ability to use engineering techniques in the design of network and transmission systems.

Computer/video skills on specific applicable hardware and software; understanding of system functionality and components.

Specialized vendor training or licensing to met a specified departmental need.

Ability to interpret data on system usage and develop engineering specifications to support changing service levels.

Ability to interpret and apply broad regulatory standards and technical specifications to assignments.

Ability to monitor and manage vendor relationships to ensure responsiveness and quality.

Core Function - Network Analysis and Management

Typical Activities

Analysis/Performance Monitoring: Analyze and monitor network activity to ensure optimal network operation. Examples of typical work activities include:

- Monitor network traffic, usage, and performance;
- Run diagnostics to forecast performance thresholds;

- Perform analysis of network efficiency (e.g., channel, trunks, etc.) and routing of traffic, troubleshoot system failures and ensure appropriate corrective actions are taken;
- Maintain signal quality performance standards in line with regulatory requirements and system user's expectations.

Control/Security: Control network activity to ensure sound and secure operations. Examples of typical work activities include:

- Secure network resources from inappropriate access;
- Maintain network security and integrity of data on the network;
- Implement disaster recovery procedures;
- Assure compliance with industry regulations (e.g., FCC and NEC).

CORE SKILLS
NETWORK ANALYSIS AND MANAGEMENT

Knowledge of communication transmission technologies (e.g., circuit and packet switching, satellite uplink, etc.).

Knowledge of network traffic and performance parameters to interpret variance and service impact to users.

Ability to analyze network/systems problems using appropriate test structures and related diagnostics (e.g., protocol analyzer, T-bert analyzer, spectrum analyzer, etc.).

Ability to operate applicable network equipment and application software programs.

Understanding of information distribution systems access and security systems (e.g., E-mail, digital voice processing equipment, electronic media distribution systems, etc.).

Ability to resolve impaired service conflicts.

Understanding of connectivity, system integration, and traffic issues.

Ability to determine most cost-effective structure and design for network.

Core Function – Network Administration and Support

Typical Activities

Network Administration: Administration of assigned network to optimize services and access to telecommunications and related networks. Examples of typical work activities include:

- Install, configure, maintain, and support network equipment and network operating systems (e.g., routers, bridges, servers, switches, and/or port selectors);
- Troubleshoot network problems, referring to vendor or technicians as appropriate;
- Provide (or order) network connectivity, ensuring appropriate integration of data, voice, and video networks;
- Conduct network tests;
- Recommend and modify network configuration to improve efficiency and cost effectiveness;
- Recommend network database policies and procedures;
- Assist in monitoring network database integrity.

Network Maintenance and Support: Ensure that the installed network is fully operational and appropriately integrated for access with other systems. Examples of typical work activities include:

- Install, upgrade, and maintain network software and related hardware and maintain documentation;
- Oversee compliance with industry and campus standards;

- Determine appropriate transmission media requirements for voice, data, and video applications;
- Act as a liaison with product vendors;
- Configure network and/or third party software application programs to provide improved response time, quality, or cost effectiveness;
- Customize or develop new reports from network control or billing database;
- Perform file conversions and system backups;
- Develop interface programs;
- Ensure adequate inventory of network supplies.

CORE SKILLS
NETWORK ADMINISTRATION AND SUPPORT

General knowledge of telecommunication network design, topology, systems interface, and protocols to meet support requirements.

Understanding of telephone switching technology support, data/video communications, and transmission media and their performance capabilities.

Knowledge of telecommunications and video industry standards.

Ability to use specified software application packages and query, utility, or report generation features and database systems.

Ability to translate user-defined requirements into telecommunication specifications and features.

Ability to install network subsystems and to modify local, customized software programs/features (e.g., voice mail, electronic mail, and telecom features).

Ability to interpret variance reports and resolve connectivity, traffic, and congestion problems as they impact services provided.