

MANAGING NETWORK ENGINEER

Tompkins County

Classification: Competitive

Labor Grade: 0

Approved: 0

MINIMUM QUALIFICATIONS: EITHER:

(a.) Graduation from a regionally accredited or New York State registered four year college **AND** six years of full-time paid experience (with increasing levels of responsibility) in computer telecommunications networks with at least two years of administrative budgeting and supervisory responsibility in the use of technology as it relates to computer hardware and software in an environment of networked microcomputers; **OR**

(b.) Graduation from a regionally accredited or New York registered two year college **AND** eight years of full-time paid experience in computer/telecommunications networks (with increasing levels of responsibility) and with at least two years of administrative budgeting and supervisory responsibilities in the use of technology as it relates to computer hardware and software in an environment of networked microcomputers; **OR**

(c.) Any combination of training and experience equal to or greater than that specified in (a) and (b) above.

Tompkins County is Committed to Equity and Inclusion. We encourage those with similar values to apply.

DISTINGUISHING FEATURES OF THE CLASS:

This position performs data communications network design, analysis, capacity planning, installation, monitoring, performance evaluation, tuning and maintenance. The network(s) include all data communications hardware, software and communication facilities necessary to receive and transmit data on an inter-agency and intra-agency basis. This equipment includes modems, diagnostic equipment, hubs, bridges, routers, multiplexors, data switches, gateways, servers, minicomputers, personal computers, printers, etc. The incumbent is responsible for working with and understanding a wide variety of data communications related hardware and software. Problem identification and resolution is technical and complicated. Error or neglect on the part of the incumbent has the potential to greatly affect the work of users, application programmers, data base programmers and operations personnel due to unavailability of some or all computer services of the agency. The incumbent works under the administrative supervision of the Director of Information Resources Management with considerable leeway allowed for the exercise of independent judgment when carrying out the duties of this position. The work must conform to policy and technical standards set for technical advice and assistance. Direction is also available in the form of policy directives, professional standards, and agency and vendor manuals and procedural guides. Supervision is exercised over the work of subordinate personnel. The incumbent will perform all related duties as required.

TYPICAL WORK ACTIVITIES:

- Conducts and/or participates in network definition and analysis studies;
- Conducts and/or participates in meetings with management, users and Information Resources Management (IRM) staff to determine the purpose and scope (requirements) of the proposed network effort;
- Reviews connectivity and access requirements;
- Documents current network with regard to communication hardware, software, and data communication facilities;
- Conducts and/or participates in meetings with IRM staff and users to discuss and identify various options for meeting network requirements;
- Analyzes and/or recommends network solutions to meet connectivity and access requirements;
- Designs proposed networks based on requirements defined during the analysis effort;
- Develops a network design including all hardware, software and communication facilities for the new or modified Network;
- Analyzes communication and network operating system software releases from vendors and software configuration changes to determine their effects on existing operations;
- Reviews and obtains approval for the network design from management;
- Participates in the selection of network hardware, software and maintenance services;

- Reviews and evaluates new technology as it may impact network standards and projected growth;
- Compares specifications and descriptions of new equipment and software packages to existing ones to determine whether their acquisition would be advantageous and cost effective;
- Analyzes proposed network specifications to determine whether they would require new hardware, software and communication facilities;
- Prepares or assists in the preparation and evaluation of Requests For Proposals for network changes;
- Makes recommendations for acquisition of network hardware, software and maintenance services;
- Orders, installs, modifies and maintains network hardware, software and communication facilities;
- Prepares and/or assists with the development of detailed technical procedures for the installation, customization, testing and maintenance of network hardware and software;
- Codes and/or assists with the modification of communication and network operating system software for optimum use of packages from vendors, ensuring that all installation standards are maintained;
- Installs and/or assists with the installation of communication hardware and wiring;
- Maintains and/or assists users and other IRM staff with software installed on microcomputer networks;
- Works with other IRM staff to establish and maintain security for the network;
- Assists with and/or identifies and orders the communication components;
- Participates in the network implementation process;
- Develops and/or assists with the preparation of network documentation;
- Verifies all levels of network testing (e.g., systems, user and operations) have been performed satisfactorily;
- Works with users and IRM staff to minimize the negative impact of changes on the total network environment;
- Works with users and IRM staff to establish and perform acceptance tests on new network hardware and software;
- Schedules all implementation activities;
- Conducts and/or assists in training of user and/or IRM staff;
- Reviews implemented network projects for effectiveness, accomplishment of stated goals and priorities, and evaluates compliance with existing requirements for controls and standards;
- Develops and/or assists with documentation preparation;
- Prepares and/or assists with the preparation and maintenance of documentation for the network;
- Monitors and evaluates data communications network performance and implements network improvements;
- Works with program and IRM management and users to determine network service requirements and develops technical procedures for meeting the objectives;
- Monitors and/or assists in the monitoring, analysis and evaluation of data communications network performance;
- Implements network hardware and/or software changes to improve performance and balance network activity;
- Participates in the development of network recovery procedures and implements the procedures during network failure;
- Works with IRM staff and users to establish network recovery, back-up and other network management procedures;
- Provides documentation of network hardware and software problems to vendors' technical staffs and other IRM staff;
- Works with the vendors and other IRM staff in determining causes and alternative means of restoring network availability, tests and implements a solution for the network hardware and/or software problems;
- Participates in capacity planning and acquisition of network hardware and software;
- Participates in the evaluation of network hardware and software required to meet projected needs;
- Prepares reports for IRM management detailing projected network hardware and software needs;
- Participates in planning, installation, configuration and technical administration of servers and other network computing resources;
- Participates in the acquisition of necessary network hardware and software;
- Acts as lead data communications specialist responsible for design, testing, implementation, monitoring, maintenance and problem resolution for networks and network computing facilities;
- Works with users, vendors and component school staff to design cost-effective networks, including technical specifications for all data communications hardware and software components;
- Performs network capacity planning on the basis of user requirements and network utilization data;
- Evaluates new hardware and software releases and makes recommendations regarding their acquisition;
- Acts as primary liaison with vendors in connection with product evaluation and problem resolution;
- Monitors overall availability, reliability, performance and cost-effectiveness of the data communications network and makes or recommends improvements;
- Assists in the preparation and evaluation of RFP's;
- Supervises and coordinates the design, installation, testing and performance evaluation of data communications hardware and software systems;
- Conducts simulation tests to identify incompatible and underutilized equipment and hardware and software deficiencies;
- Evaluates and oversees the installation of security systems to assure network integrity;
- Analyzes requirements for specialized network interfaces and designs and develops specialized software for such interfaces or recommends its acquisition from vendors;

KNOWLEDGE, SKILLS, ABILITY AND PERSONAL CHARACTERISTICS:

- Thorough knowledge of computer hardware, software and their working relationships;
- Thorough knowledge of data communication hardware and software;
- Thorough knowledge of network standards and protocols;
- Thorough knowledge of systems analysis and systems design;
- Thorough knowledge of computer terminology;
- Thorough knowledge of operating systems/standards/utilities;
- Thorough knowledge of security methods and procedures in a data processing environment;
- Thorough knowledge of testing and debugging techniques;
- Thorough knowledge of supervisory principles and practices and the ability to implement them;
- Ability to communicate in a complete, accurate and concise manner both verbally and in writing with a variety of individuals including supervisors, users, vendors and component schools;
- Ability to read and understand technical literature;
- Ability to understand, interpret and carry out complex oral and written instructions;
- Ability to design networks;
- Ability to implement and test network products;
- Ability to conduct post-implementation review and problem resolution;
- Ability to maintain network software;
- Ability to communicate technical information both orally and in writing;
- Ability to think logically;
- Ability to plan, coordinate and direct the activities of the unit;
- Ability to prepare technical training material;
- Ability to conduct technical training;
- Physical condition commensurate with the demands of the position.