School of Technology

Career Track Guide

Network Engineering
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What career options will your degree in Network Engineering afford you? We’ve assembled a series of career path overviews, job titles, and job descriptions to help you explore the possibilities and focus on a career track.

Job descriptions were compiled from actual online job postings and from Johnson & Wales’ DACUM (Developing a Curriculum) process (when we ask practicing professionals to detail the duties, tasks, skills and required work behaviors associated with their positions). Now is the time to collect all the information you can and make informed decisions about your career path. The information assembled here is a great place to start.
Career Paths in Network Engineering

The following Career Paths and supporting titles/descriptions are provided in this Career Track Guide.

**Network Engineering**
- Network Technician
- Network Engineer
- Senior Network Engineer
- Network Analyst
- Network Designer
- Network Administrator
- Network Security Specialist
NETWORK ENGINEERING

Network Engineering involves building and maintaining a company’s backend technology. The field ranges from building a network to configuring and maintaining one.

Network Technician
A network technician’s primary responsibilities are supporting, monitoring, testing, and troubleshooting hardware and software problems pertaining to local area and wide area network environments. The technician may recommend and schedule repairs, provide end-user support for all LAN- and WAN-based applications, and install and configure workstations.

A network technician:
- Has knowledge and experience with LAN based networking products such as switches, bridges and routers.
- Has server experience on various platforms.
- Assists with planned network upgrades and audits.

Network Engineer
A network engineer builds and maintains a company’s networks and databases. A network engineer may implement a local area network (LAN) for intra-office communication and a wide area network (WAN) to support an internet connection, making sure that all workstations, hubs, servers, routers and switches work.

A network engineer:
- Provides technical support for PC’s, networks and operating systems.
- Maintains and monitors network security.
- Researches and recommends new technologies.
- Develops operating procedures and standards for system customization, installation and interfacing.

Senior Network Engineer
A senior network engineer is responsible for providing technical analysis in data network planning, engineering and design.

A senior network engineer:
- Provides analysis for implementation techniques and tools for the most efficient solution to complex network problems.
- Maintains technical expertise in all areas of network and computer hardware and software interconnection and interfacing (routers, multiplexers, hubs, bridges, gateways, etc.).
- Coordinates third-party maintenance for network equipment and troubleshoots problems with department users and department network administrators. May develop uniform operation procedures.
NETWORK ENGINEERING CONTINUED

A senior network engineer (continued):
- Leads research, decision, and integration efforts for new technology elements or systems.
- Develops and tracks project plans, monitors budgets and fosters an environment that promotes on-time deliverables of high quality design and documentation.

Network Analyst
A network analyst is responsible for various aspects of the administration, configuration, programming, maintenance and support of networks, which can include LAN/WAN, desktop and software support. He/she may also be responsible for researching, evaluating, and integrating new technology into the network.

A network analyst:
- Evaluates and implements network management and performance monitoring tools.
- Ensures connectivity between various platforms.
- Develops and maintains documentation for operating standards and procedures.

Network Designer
Closely related to a network analyst, a network designer is responsible for developing, integrating, testing, documenting, and maintaining network and communications infrastructure.

A network designer:
- Plans and coordinates the analysis of network requirements.
- Designs, reviews and influences major critical network projects.
- Investigates and recommends new technologies to maintain or improve network performance.
- Designs and builds systems in alignment with architectural direction.
- Takes the lead in resolving complex network problems.
- Interfaces with customers, vendors, managers and users.

Network Administrator
A network administrator is responsible for maintaining existing systems as well as building and deploying new systems. The network administrator analyzes the requirements and contributes to the development and enhancement of the system.
Other responsibilities of a network administrator include:

- Leading and managing multiple work teams.
- Identifying opportunities for improvement of common problems on the system.
- Supporting systems design, integration, deployment and testing.
- Providing technical support, consultation, problem analysis and resolution for complex problems.
- Assisting and training network personnel.
- Managing system performance, downtime, disaster recovery planning and development of staff.
- Overseeing the configuration of routers, hubs, switches and related network equipment.
- Designing, implementing and documenting appropriate hardware/software architecture.
- Developing, documenting and implementing computer service strategies which effectively utilize technologies and reduce costs.

Network Security Specialist
A network security specialist is responsible for planning, coordinating and implementing network security measures to make sure a company's computer network is not vulnerable to computer security threats.

A network security specialist:
- Implements and monitors intrusion detection programs and protocols.
- Manages the encryption and cryptography elements of a network.
- Ensures the ongoing security of both wired and wireless network systems.
- Implements procedures and programs to reduce and/or eliminate SPAM and viruses within a network.
- Sets authentication protocols, and manages computer forensic processes when requested by management.