NETWORK ENGINEER VS NETWORK ADMINISTRATOR: ROLES, RESPONSIBILITIES, AND JOB DESCRIPTIONS



Network engineers and network administrators are common positions in the IT field, and both can hold a lot of clout. While it's possible for the jobs to sound similar in descriptions and functions, and have some real overlap in responsibilities, there are distinct differences. In general, the network engineer is responsible for the design and development of a computer network whereas a network administrator is responsible for ensuring and maintaining the network once it's been developed.

In this article, we are exploring the roles, responsibilities, and prospects for both network engineers and network administrators.

Terminology

The terms "network engineer" and "network architecture" may be used interchangeably. A network administrator, on the other hand, is typically differentiated from engineers and architecture.

As in any field, a title is less important that the specifics of the job description. The larger the company, the more specific a job may be. The smaller a company, the more duties one single job may have.

Network Engineer

Roles and Responsibilities

The first part of a network engineer role must do is understand, at a macro level, the structure and network necessities of the entire organization. Armed with this knowledge, the network engineer must then design and maintain any network that supports the company lifecycle and growth opportunities. A network engineer may need to analyze what's working and what isn't to find room for improvement – all while working within a preset budget.

Common roles and responsibilities of a network engineer include:

- Designing and implementing both the physical and wireless networks, including those for computer communications and telecommunications
- Maintaining network performance
- Managing the electronic equipment that activates any network pieces
- Troubleshooting network problems
- Researching and integrating new technologies into the network lifecycle
- Interfacing with network administrators to manage or assist problems

Peers and Reporting

A network engineer frequently reports directly to a CTO or CIO. Depending on company hierarchy, a network engineer may oversee network administrators. Alternatively, a network engineer may not oversee any employees, but instead partner with certain roles as projects require it.

Job Requirements

An ideal network engineer will often need, at minimum, a BS or MS in a computer-related field such as computer science, computer engineer, or programming. Some employees prefer an MBA in information systems. Hands-on experience, particularly in IT systems or network administration is always helpful for a candidate.

Candidates applying for a network engineer position should underscore not only their knowledge, but their skills. Analytical skills and attention to detail are both vital skills, as network engineers must review complicated network systems and analyze what's working and what isn't – and then suggests and implements solutions.

Leadership and organization skills are also helpful, as network engineers are often responsible for collaborating with a range of employees.

Outlook

For network engineers, the U.S. Bureau of Labor Statistics (BLS) projects an above-average growth of nine percent nationally through 2024. Still, the department cautions that as more businesses adopt cloud computing more wholly, the overall need for network engineering and architecture could decrease in the longer-term.

Network Administrator

Roles and Responsibilities

The role of a network administrator is often described as picking up where the network engineer's responsibilities end. Whereas the engineer focuses on lifecycle network implementation, the daily operations and maintenance (O&M) of the network often falls to the network admin. Still, the administrator's role is often a proactive one, helping prevent security comprises before they happen, instead of reacting afterwards.

The breadth and depth of a network administrator's responsibilities can depend on the size of the organization. In larger organizations, one or several network administrators could share the following roles and responsibilities:

- Monitoring and maintaining computer infrastructure, particularly emphasizing:
  - On-site servers
  - Interactions between the software and the network
  - Network integrity and resilience
- Testing networks for weaknesses or potential sites of compromise
- Staying abreast of necessary updates
- Implementing security programs with hardware and software

In smaller organizations, a network admin may also be responsible for:

- Procuring new hardware
- Rolling out new software
- Managing email and internet filters
- Maintaining disk images for new installs
- Ensuring licenses are current
- Addressing poor data management practices

Peers and Reporting

Network administrators frequently report to network engineers, as their roles are closely related. In time, a network admin could be groomed to move into a network engineer role.

Network administrators also interface with many members of IT and the company at large, as problems warrant.

Job Requirements

While a BS in a computer-related field is helpful, it may not be necessary for a network admin role. Many organizations prefer specific training and certifications alongside relevant hands-on experience. Common training and certifications for network administrators can include Juniper, Cisco, Brocade Certified Network Engineer, Microsoft, and Red Hat.

Importantly, the network admin must generally understand the network that the engineer is designing. As the network engineer and network administrator must work in tandem, clear understanding and communication between the positions is essential.

Outlook

The BLS projects an eight percent growth in this field through 2024. This growth is on par with the average growth across all occupations. The BLS bases this increased demand for network administrators on the increased need companies will need for newer, faster technologies and, of course, their mobile networks. Healthcare industries are particularly likely to need more network administrators, as national legislation mandates that healthcare continue to implement technology in the industry.