IT Specialists and their Roles

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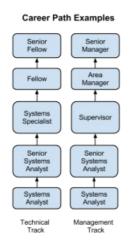
	WHAT'S COVERED

The I.T. specialist has emerged as one of the most important roles within an organization. As organizations grow increasingly reliant on information technology to achieve goals, technical expertise — and the ability to act as a liaison between the technically proficient and non-technically proficient — is of great value to the organization. In this tutorial, we will take a closer look at the I.T. specialist, and the various capacities in which an I.T. specialist may work.

Our discussion will break down as follows:

1. I.T. Career Paths

Working with information systems can be a rewarding career choice. Whether you want to be involved in very technical jobs (programmer, database administrator), or you want to be involved in working with people (systems analyst, trainer), there are many different career paths available. Many times, those in technical jobs who want career advancement find themselves in a dilemma: do they want to continue doing technical work, where sometimes their advancement options are limited, or do they want to become a manager of other employees and put themselves on a management career track? In many cases, people proficient in technical skills are not gifted with managerial skills. Some organizations, especially those that highly value their technically skilled employees, will create a technical track that exists parallel to the management track. This way, they can retain employees who are contributing to the organization with their technical skills.

Career Tracks in Information Systems

2. I.T. Specialists

Another group of information-systems professionals are involved in the day-to-day operations and administration of I.T. These people must keep the systems running and up-to-date so that the rest of the organization can make the most effective use of these resources. Listed below are the various I.T. specialists and their responsibilities within a business or organization.

I.T. Specialist Role	Responsibility
Network Administrator	A network administrator is in charge of maintaining a business or organization's computer network. This person is also tasked with keeping the network up-to-date and ensuring that the organization's network is reliable, secure, and able to handle the data load imposed on the network.
Information-Security Officer	An information-security officer is in charge of setting information-security policies for an organization, and then overseeing the implementation of those policies. This person may have one or more people reporting to him or her as part of the information-security team. As information has become a critical asset, this position has become highly valued. The information-security officer must ensure that the organization's information remains secure from both internal and external threats.
Computer Operator	A computer operator is the person who keeps the large computers running. This person's job is to oversee the mainframe computers and data centers in organizations. Some of the operator's duties include keeping the operating systems up-to-date, ensuring available memory and disk storage, and overseeing the physical environment of the computer. Since mainframe computers have been increasingly replaced with servers, storage management systems, and other platforms, computer operators' jobs have grown broader, and now include working with these specialized systems.
Database Administrator	A database administrator (DBA) is the person who manages the databases for an organization. This person creates and maintains databases that are used as part of applications or the data warehouse. The DBA also consults with systems analysts and programmers on projects that require access to, or the creation of, databases.
Help-Desk/Support Analyst	Most mid-size to large organizations have their own information-technology help desk. The help desk is the first line of support for computer users in the company. Computer users who are having problems, or need information, can contact the help desk for assistance. Many times, a help-desk worker is a junior-level employee who does not necessarily know how to answer all of the questions that come his or her way. In these cases, help-desk analysts work with senior-level support analysts, or have a computer knowledge base at their disposal, to help them investigate the problem at hand. The help desk is a great place to break into working in I.T. because it exposes you to all of the different technologies within the company. A successful help-desk analyst should have good people and communications skills, as well as at least junior-level I.T. skills.
	The I.T. infrastructure manager is responsible for managing an organization's infrastructure personnel. The manager may delegate work to the infrastructure team to test, develop, or

Infrastructure Manager	deploy I.T. software across the organization. Additionally, the infrastructure manager is responsible for managing and maintaining the organization's entire catalog of I.T. technologies. This person also develops all of the I.T. standards and protocols for the organization.
Security Administrator	Responds to organizational network problems (user access to network and/or software on the network). The security administrator implements network security policies, and prevents unauthorized access to the network and data housed on the network.

3. I.T. Certifications

As technology is becoming more and more important to businesses, hiring employees with technical skills is becoming critical. But how can an organization ensure that the person it is hiring has the necessary skills? These days, many organizations are including technical certifications as a prerequisite for getting hired. **I.T. Certifications** are designations given by a certifying body that confirm someone has a specific level of knowledge in a specific technology.

This certifying body is often the vendor of the product itself, though independent certifying organizations, such as CompTIA or Cisco CCNA, also exist. Many of these organizations offer certification tracks, allowing a beginning certificate as a prerequisite to getting more advanced certificates. To get a certificate, you generally attend one or more training classes and then take one or more certification exams. Passing the exams with a certain score will qualify you for a certificate. In most cases, these classes and certificates are not free and, in fact, can run into the thousands of dollars.

Some examples of the certifications in highest demand include Microsoft (software certifications), Cisco (networking), and SANS (security). For many working in I.T. (or thinking about an I.T. career), determining whether to pursue one or more of these certifications is an important question. For many jobs, such as those involving networking or security, a certificate will be required by the employer as a way to determine which potential employees have a basic level of skill. For those who are already in an I.T. career, a more advanced certificate may lead to a promotion. There are other cases, however, when experience with a certain technology will negate the need for certification. For those wondering about the importance of certification, the best solution is to talk to potential employers and those already working in the field to determine the best choice.

📄 **TERM TO KNOW**

I.T. Certification
Designations given by a certifying body that someone has a specific level of knowledge in a specific technology.

📋 **SUMMARY**

An I.T specialist brings a specialized skill set to an organization. Due to their versatility, I.T. specialists may serve an organization as a network administrator, database administrator, computer operator, and an information security officer, depending on the needs of the organization. In this tutorial, we took a deeper look at what an I.T. specialist is, and the various capacities in which the specialist serves.

Source: Derived from Chapter 9 of "Information Systems for Business and Beyond" by David T. Bourgeois. Some sections removed for brevity.

https://www.saylor.org/site/textbooks/Information%20Systems%20for%20Business%20and%20Beyond/Textbook.html

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IT Certification

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