

## Landing that first job in networking

I am often asked for career advice on how to break into the networking job market. While my answers have changed somewhat over the years as the market has changed, generally my responses have remained the same. This is because the core of networking has remained the same: it's still about getting two devices to talk with each other.

The basic methodologies for ensuring proper communication really haven't changed since the dumb terminal to mainframe via direct serial connection days. There has to be an initiation of communication, a response to the initiation and a response to that agreeing on how to communicate. In the IP world, that is the well-known "three-way handshake" involving SYN, SYN-ACK and ACK packets.

To land that first networking job, you must be able to set up a system to establish the communication between two parties before relevant data can pass. While there is always a certain element of luck involved in landing that first position, a few tips can increase the chances of being successful.

### Specialising in a field

The term "network administrator" historically can refer to many types of positions. For example, in the '90s, it often meant Novell file server administration. Today, it may be listed in advertisements for Windows server administration positions. It may mean administering a LAN, WAN or even a SAN.

Acronym saturation is a fact in networking. A position may require knowledge with OSPF or BGP. On the voice side, there are network administrators whose primary functions are administering VoIP networks. Then there are necessary network services, such as DNS, DHCP, LDAP, RADIUS or AD.

Networking is such a broad field that it's important to decide on a certain niche and become proficient at it. Composer Billy Joel once said that he stood out as a piano player not because he was exceptional at piano playing, but competent in a field of mediocrity. It may be best to specialise in one particular aspect of network administration at the early stages of your career so you stand out against an average field.

However, as you progress down your chosen path, the reverse is true. Because of the intertwined aspects of networking, and IT in general, it becomes critical to understand how your specialised area contributes to the overall IT environment as you progress in your networking career.

When looking to gain a foothold in networking, it's advantageous to focus on becoming competent in one field while simultaneously expanding knowledge in other network and IT aspects. In reality, once you land that first networking position, exposure to the other elements occurs as a function of the position.

### Certifications and experience

After the decision on a career path is made, it's important to look at what education is available and needed to excel in that field. Several years ago, obtaining a certification was as simple as taking a course or courses and passing an exam or series of exams. This is a tried and true method of testing knowledge.

The problem was, however, that applied knowledge wasn't tested. The market became flooded with IT folks with multiple certifications. At that time, with the IT job market booming, often just one certification meant one or more job offers -- without the applicant clearly demonstrating how network principles were applied in real-life situations.

Without the benefit of experience, sometimes applying the knowledge becomes an insurmountable task. I recall one applicant years ago who held one of the hot certifications at the time and was very knowledgeable of how TCP worked. However, when I showed the applicant a trace of a simple network connectivity problem (the client had an incorrect DNS server entry and therefore was issuing unheard requests to an unknown DNS server), the applicant couldn't diagnose the problem and was subsequently assigned to the "rejected" pool.

This isn't to say that a certification isn't important, just that it isn't a magic wand to land a killer networking job. Obtaining a certification can hold much more meaning (and be more valuable) if a certain level of experience is reached first. Fortunately, a certain level of industry experience is needed to obtain many of today's most highly sought-after certifications.

Furthermore, while many entry-level network positions require a university degree, others don't. Often requirements in a job posting will ask for a degree in a related field or comparable experience. Obtaining a relevant degree can satisfy the experience requirement. But just as in the case of certifications, a degree doesn't necessarily guarantee a network administrator position.

So the first step in a long and successful networking career, like many other careers, often means starting at the bottom and working up to gain critical experience. I'm a firm believer that someone can't be a successful router administrator without the experience of pulling and terminating cables. The best-case scenario is to work at a lower-end position while obtaining the desired education. Then the experience and education requirements will be met at, ideally, the same time.

Think of the network career plan in terms of the OSI model; start from the physical layer and move up. The upper layers depend on the lower, both in terms of communication and a network career. And if you don't have knowledge or an understanding of the OSI model, now is a good time to learn.

### Landing the first job

If becoming a network administrator is a career goal, starting as a cable jockey may seem unappealing. However, many cabling positions also allow for an introduction to and experience with basic network device configuration. If a network manager can send one technician out to cable and install a switch instead of two, expenses and time are reduced.

My first network position, as a part-time technician, was landed despite lots of theory but no practical network knowledge. It was my experience in electronics and software engineering that convinced my future supervisor that I was a good fit for the position. The supervisor's reasoning was that if I could follow instructions to facilitate simple repairs, I could be successful at fixing computer networks.

That was before networking was as ubiquitous as it is today. With home high-speed routers touting functions that were considered advanced not too many years ago, the ability to gain hands-on experience is as close as a home cable modem or DSL line. Loading a sniffer product such as Wireshark on to a home computer and taking traces off the wire of various network-related activities (web surfing, email, DHCP, DNS and so on) is a valuable and free way to gain some real-world knowledge of how networks work.

Knowing what type of position to look for is important. Generally speaking, the title "network technician" more often than not refers to an entry or low-level position with little experience needed, whereas network administrator/engineer positions generally require more experience and knowledge.

An informal survey of both network administrator and network technician positions available through tech job site Dice.com verifies this. Generally, those seeking to hire for network administrator positions required or preferred some industry certifications relevant to the tasks (CCNA, MSCE, etc) and required at least two to three years of direct experience.

However, many entry-level network technician positions often asked for only knowledge of certain network concepts while not explicitly requiring certifications or job experience. As a hiring manager, if a candidate explains that he has set up a router on a Linux machine, is running NAT, ipchains and ISC DHCP software (and can explain the operations of each), his knowledge of certain network components is demonstrated even without any network-related job experience.

One other important trait that managers look for in prospective employees is the ability to effectively communicate technical issues on an appropriate level, be it conversing with an end user or an engineer from a network equipment vendor. Often, what I will do in an interview is present a network issue and ask the candidate to explain the problem to two audiences, an end user and a senior network administrator. A successful candidate will be able to explain the problem and solution paths to both, using the most effective terminology for each.

### Other advice

The above is culled from my experiences on both sides of the hiring table as well as those from colleagues. However, I'm sure it's not complete, and there are surely other good suggestions out there.

Being successful in landing that all important first network position is something that every network professional has faced and every prospective network professional will face. It's all about learning from each other at this point to get where we want to go.