

Chapter 1

CompTIA Network+ in a Nutshell

Lab Exercises

- 1.01 Exploring the Network+ Requirements
- 1.02 Related Certifications
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- 1.04 Scheduling the Network+ Exam

Congratulations! You have decided to tackle the prestigious CompTIA Network+ certification. Whether you are a seasoned network engineer pursuing certification to further your career, or a relative novice building your fundamental skills in networking, you're in the right place. The fact that you've got the *Mike Meyers' CompTIA Network+® Guide to Managing and Troubleshooting Networks* textbook and this lab manual in your hands shows that you're serious about earning that certification. That's a smart move!

As discussed in the textbook, the term *networking* describes a vast field of study, far too large for any single certification book, training course, or for that matter, lab manual to cover. However, armed with the textbook and this lab manual, you have the tools not only to pass the certification exam, but also to exercise the skills you will need to develop and grow as a networking professional. Ask any veteran network tech and they will tell you that the key to being a good tech is working through the installation, configuration, management, and troubleshooting of network devices, cabling, protocols, and applications. That's where this lab manual is invaluable. It will take you through hands-on exercises with cabling, switches, routers, and servers configuring protocols and services such as TCP/IP, DNS, DHCP, QoS, VPNs, and many more. If some of these abbreviations are new to you, don't worry; you will learn them all!

Another skill required by network techs is the ability to find information regarding network devices, protocols, and applications and their interoperability quickly and efficiently. Many times when you run into problems, it's not necessarily a failure of one specific device, protocol, or application but a combination of the configuration parameters and interaction between those devices, protocols, and applications. Many of the labs will have you practice the art of researching information on these devices, protocols, and services as if your job depended on it. It just might!

To help you grasp these networking concepts, the following scenario is used throughout the lab manual. You are a desktop support specialist working in the IT Department at the main headquarters of your state's department of transportation, if you are in the United States. If you are in a country that belongs to the

EU, it's the European Commission: Transport. Whatever organization handles the driver's licenses, vehicle registration and inspection, and upkeep of the highway system for your country may be substituted for this scenario. The abbreviation used for this fictitious organization will be ECT-DOT.

You are CompTIA A+ certified, and over the past year you have befriended Maggie, one of the network technicians in the department. You have shown some interest in applying for a position in the networking group and asked Maggie for some recommendations. She complements you on achieving the CompTIA A+ certification and your tenacity and work ethic when working through trouble tickets as a member of the desktop support group. She believes that achieving the CompTIA Network+ certification will strengthen your fundamental understanding of networking and open the lines of communication with the hiring manager. You respect her advice and dive right in to a CompTIA Network+ training course—this course!

This chapter will show you how to prepare for the Network+ exam, while the labs will take you through the steps needed to start studying for it. First, you'll make certain that you understand the important details of the certification itself. Next, you'll look at how Network+ applies toward other IT industry certifications. Then you'll formulate a study plan. Finally, you'll schedule your Network+ exam. Ladies and gentlemen, start your engines!



60 MINUTES

Lab Exercise 1.01: Exploring the Network+ Requirements

The CompTIA Network+ certification is an industry-wide, vendor-neutral certification qualifying a tech's basic skills in supporting networks, and knowledge of networking concepts. Network+ is to network techs what A+ is to PC techs: a valuable credential assuring clients and employers that you possess the aptitude and specific technical skills to implement and maintain computer networks on a variety of hardware and software platforms. To achieve this certification, you must pass the Network+ exam at an approved exam administration center. The CompTIA Network+ certification requires just a single exam, unlike the CompTIA A+ certification, which requires you to pass two exams: the CompTIA A+ Essentials exam and one of the three specialty exams: the 220-602 (IT Technician), the 220-603 (Help Desk Technician), or the

220-604 (Depot Technician). The Network+ (2009 Edition) certification exam is defined by a documented list of exam objectives separated into domains. Each domain counts toward a percentage of the exam's total scoring. These domains are organized into six categories: Network Technologies, Network Media and Topologies, Network Devices, Network Management, Network Tools, and Network Security.

The domains of network technologies, media and topologies, and management are weighted equally and make up 60 percent of the exam. The domain of network devices is next at 17 percent, followed by network tools and network security at 12 percent and 11 percent respectively. It's important to understand what's required to pass the Network+ exam, so you should become familiar with the exam objectives. Detailed Network+ objectives may be downloaded from the CompTIA Web site.

Learning Objectives

In this lab, you will visit the CompTIA Web site to download the latest Network+ exam objectives. By the end of this lab, you will be able to

- Define the objectives being tested on the Network+ exam

Lab Materials and Setup

The only requirements for this lab are a PC and Internet access.

Getting Down to Business

Many techs pursue certifications to validate their current skill set or to advance their careers. The Network+ certification not only meets these criteria; it also provides the candidate (you) with an excellent foundation in networking and serves as a stepping stone to more specialized certifications.

To develop your understanding of the Network+ exam requirements, domains, and objectives, complete the following steps:

Step 1 Launch your Web browser and head over to the CompTIA Web site, www.comptia.org. Follow the links to download the Network+ objectives as a PDF file. Web sites change often, so you may have to enter different information than at the time of this writing. Currently you must enter your name, e-mail address, and country before you can download the Network+ objectives.

Step 2 Summarize the Network+ exam objective domain 1.0, Network Technologies.

Step 3 Summarize the Network+ exam objective domain 2.0, Network Media and Topologies.

Step 4 Summarize the Network+ exam objective domain 3.0, Network Devices.

Step 5 Summarize the Network+ exam objective domain 4.0, Network Management.

Step 6 Summarize the Network+ exam objective domain 5.0, Network Tools.

Step 7 Summarize the Network+ exam objective domain 6.0, Network Security.



30 MINUTES

Lab Exercise 1.02: Related Certifications

In addition to the value of the Network+ certification itself, the IT industry recognizes that the skill sets defined by the Network+ objective domains overlap those of other established IT certifications. The Network+ certification even contributes to the elective requirements of some of the certifications offered by the IT industry's major vendors.

Because of the broad base of networking skills that it covers, Network+ certification will also give you a leg up on IT certifications, even those for which it doesn't directly fulfill certification requirements.

Learning Objectives

In this lab, you'll explore the benefits of Network+ certification as it applies toward further IT industry certifications.

At the end of this lab, you will

- List the IT certifications toward which CompTIA Network+ directly applies
- Map out a certification path beyond Network+

Lab Materials and Setup

The only requirements for this lab are a PC and Internet access.

Getting Down to Business

The CompTIA Network+ certification is vendor-neutral. This means that the broad skill base encompassed by Network+ can be used to launch further, specialized certifications with IT vendors such as Microsoft and Cisco.

Step 1 Navigate over to the CompTIA certification Web site at http://certification.comptia.org/candidates/whats_next.aspx. Which other IT certifications accept the CompTIA Network+ certification as partial fulfillment of their requirements?

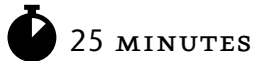
Step 2 Visit Microsoft's certification Web site at www.microsoft.com/learning/mcp/default.msp and explore the requirements for the various Microsoft certifications. How do you think the Network+ certification will benefit an IT tech pursuing these certifications?

Step 3 Now explore some of the organizations offering certifications on Linux at <http://gocertify.com/faq/linuxfaq.shtml>. How do you think the Network+ certification might benefit an IT tech pursuing these certifications?

Step 4 Next, surf over to Cisco certifications at www.cisco.com/web/learning/le3/learning_career_certifications_and_learning_paths_home.html and explore the various paths to become a Cisco certified

professional. How do you think the Network+ certification might benefit an IT tech pursuing these certifications?

Step 5 Now that you've seen the more common certifications that relate to Network+, what do you think will be a natural certification progression for you?



Lab Exercise 1.03: Study Preparation

If you take a look at the certification blogs, I'm sure you will find candidates claiming to have passed some certification exam or other with little or no preparation. Though everybody is different, even seasoned network techs have to spend some time on areas that they are less familiar with to be successful on the Network+ exam. The CompTIA Network+ exam is a thorough test of your understanding of a broad range of networking topics and concepts. As such, it can be very challenging. No matter how much networking experience and skill you possess, it is highly recommended that you develop a strong preparation plan to maximize your chance of passing the exam the first time.

With that in mind, your next step is to come up with a plan of attack for the Network+ exam. Preparation is the key, so start by identifying what you need to study and how to go about studying.

Learning Objectives

In this lab, you will develop your plan of action for preparing for the Network+ exam. To do this you need to deal with two issues: determining which topics you need to study the most and checking your study habits.

At the end of this lab, you will

- Identify the Network+ topics you need to spend the most time on
- Develop a study plan

Lab Materials and Setup

The only requirements needed for this lab are a PC and Internet access.

Getting Down to Business

The instructors of Total Seminars have taught the Network+ certification for years and have helped thousands of techs achieve their CompTIA Network+ certification. Incorporating this experience, we have developed a handy template to give students some idea of what they need to study and how much time they need to devote to preparing for the Network+ exam. This template is essentially the same one that appears in the *Mike Meyers' CompTIA Network+® Guide to Managing and Troubleshooting Networks* textbook, except that here we have added an extra step to help you determine which topics you need to study.

Step 1 Look at each of the listed skills and then circle the amount of experience you have regarding that skill. Circle any skill where your amount of experience is “None”, “Once or Twice”, “A Few Times”, or “Quite a Bit”.

Type of Experience	Amount of Experience			
	None	Once or Twice	A Few Times	Quite a Bit
Installing a SOHO wireless network	4	2	I	I
Installing an advanced wireless network (such as 802.1X, RADIUS)	2	2	I	I
Installing structured cabling	3	2	I	I
Configuring a home router	5	3	2	I
Configuring a Cisco router	4	2	I	I
Configuring a software firewall	3	2	I	I
Configuring a hardware firewall	2	2	I	I
Configuring an IPv4 client	8	4	2	I
Configuring an IPv6 client	3	3	2	I
Working with SOHO WAN connection (DSL, cable)	2	2	I	O
Working with advanced WAN connection (Tx, OCx, ATM)	3	3	2	2
Configuring a DNS server	2	2	2	I
Configuring a DHCP server	2	I	I	O
Configuring a Web application server (HTTP, FTP, SSH)	4	4	2	I
Configuring a VLAN	3	3	2	I
Configuring a VPN	3	3	2	I
Configuring a dynamic routing protocol	2	2	I	I

Now that you've got a feel for the topics that you need to concentrate on, you need to determine your total study time. Take the total amount of time you've circled and use the following table to add in your experience factor.

Months of Direct, Professional Experience...	To Your Study Time...
0	Add 60 hrs
Up to 6	Add 30 hrs
6 to 9	Add 10 hrs
Over 9	Add 0 hrs

What is the total number of estimated hours you will need to study for the Network+ exam?

Step 2 Now that you know what topics are important to you and how much time they will take, you need to develop your study plan. First of all, take the amount of time you've set aside and determine how many days you will need to prepare. Consider work, holidays, weekends—anything that will affect your study time. (If you're in an instructor-led course, this is easy. Use the end of the course.) Then break down your textbook into manageable chunks. (Again, if you're in a course, your instructor will certainly already have done this for you.) You now have your deadline—the day that you will say you're ready to take the test!

What is your deadline for taking the Network+ exam?



15 MINUTES

Lab Exercise 1.04: Scheduling the Network+ Exam

Schedule your exam with one of the approved exam administration centers, Prometric or Pearson VUE. Don't put this off—do it now! Get it out of the way so that you'll feel you're working toward a deadline.

Learning Objectives

In this lab, you'll learn how to schedule your Network+ exam with an approved exam administration center.

At the end of this lab, you will be able to:

- Schedule your Network+ exam with an approved test administration center

Lab Materials and Setup

The materials you need for this lab are

- A PC with Internet access, or a telephone
- Payment method (credit card or voucher number)

Getting Down to Business

There are a lot of very qualified, yet uncertified, techs out there in the IT world. Many of them have even gone through the training courses to get certified, only to postpone (sometimes permanently) taking the certification exam. To paraphrase Steve Jobs, real techs certify. Sure, some people scoff and say that certifications are just pieces of paper, but even competent, seasoned techs will tell you that certifications have only helped their careers.

Take the plunge! Schedule your exam for the CompTIA Network+ exam right now.

Step 1 You can register online for Prometric exams at www.register.prometric.com/menu.asp. Pearson VUE's online exam registration is at www.vue.com/comptia/. You can also register the old-fashioned way by calling them on the telephone. In the United States and Canada, call Prometric at 888-895-6116 or Pearson VUE at 877-551-7587 to locate the nearest testing center and schedule the exam. You'll also find toll-free numbers for test centers on the respective testing organizations' Web sites. Prometric's phone numbers are at www.prometric.com/CompTIA/default.htm. Pearson VUE's toll-free telephone numbers are at www.vue.com/contact/vuephone/. Make sure you have a method of payment (credit card or voucher number) and some form of identification.

Here's some great news: You don't have to pay full price for your Network+ exam! Virtually every organization that provides Network+ training and testing also offers discount vouchers. In a nutshell, you pay a CompTIA member a discounted price, and in return you get a unique number that you provide instead of a credit card number when you schedule your exam. One provider of Network+ vouchers is Total Seminars. You can call Total Seminars toll-free from the U.S. or Canada at 800-446-6004, or check the Web site: www.totalsem.com. If you don't buy your voucher from us, for goodness' sake, buy one from some other organization.

When are you scheduled to sit for the CompTIA Network+ exam?

✖ Cross-Reference

For details on taking the Network+ test, go to the CompTIA Web site (www.comptia.org).

Lab Analysis

1. You are interviewing for a network support position at a large business organization. The hiring officer isn't familiar with the Network+ certification. Can you briefly summarize the value of the Network+ certification for her?

2. Preparing for and passing the Network+ certification exam demonstrates that you have built a strong foundation in networking concepts and technologies. What might you list as your next step in certification?

3. The TCP/IP suite has become the de facto standard for networking protocols. What are some of the protocols included in the TCP/IP suite?

4. What routing protocols should you become familiar with as you study for the Network+ exam?

5. Name four popular addressing formats referenced on the Network+ exam.

Key Terms Quiz

Use the vocabulary terms from the list below to complete the sentences that follow. Not all of the terms will be used.

approved exam administration center

Cisco

CompTIA

MCP

MCSA

MCSE

Microsoft

Network+

objective domains

Pearson VUE

Prometric

1. _____ is the organization that offers the Network+ certification.
2. The Network+ certification has a total of six _____, including Network Technologies, Network Media and Topologies, Network Devices, Network Management, Network Tools, and Network Security.
3. After achieving the Network+ certification, you might consider working toward _____ and _____ vendor certifications.
4. Your Network+ exam must be taken at an _____.
5. _____ and _____ are the two organizations that administer the Network+ exam.