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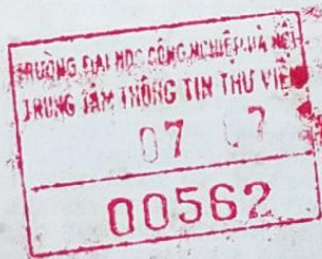
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Network+TM Certification Bible

**Joseph Byrne, Diane McMichael Gilster, Trevor Kay, NIIT,
James Russell, Series Editor Ron Gilster**



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Network+™ Certification Bible

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Preface

Welcome to the *Network+ Certification Bible*! This book is designed to help you acquire the knowledge, skills, and abilities you need to pass CompTIA's Network+ Certification.

This book deals with all of the objectives stated by CompTIA for the Network+ exam. You will learn the different media and topologies, protocols and standards, including TCP/IP and the OSI model, network implementation, and network support. This book will also teach you how to use TCP/IP troubleshooting utilities including *tracert*, *ping*, and *NSLOOKUP*. You will also learn remote connectivity troubleshooting and client/server network configurations.

My hope is that you'll find this book the most helpful Network+ Certification product reference that you've ever read. I also hope that you'll use it to prepare for CompTIA's Network+ Certification exam, then come back to it again and again as you perform your day-to-day Network Technician tasks.

How This Book Is Organized

This book is organized into four major parts, followed by a robust glossary, an index, and one compact disc.

Here's what you'll find in this book:

Part I: Media and Topologies

Part I presents the information needed to understand the common media used and the different types of topologies used on a network. This part covers the common media standards and the popular network components such as hubs, switches, bridges, routers, and gateways.

Part II: Protocols and Standards

Part II covers the different protocols used on a network. In this part you will learn about MAC addresses, the OSI model, and the common network protocols such as TCP/IP, FTP, SMTP, and TFTP, for example. This part also covers TCP/UDP port functionality, network services such as DHCP, DNS, WINS, and SNMP. IP Addressing is also covered in this part along with understanding public and private networks, WAN technologies, remote access, and security protocols.

Part III: Network Implementation

Part III presents the information needed to implement a successful network installation. In this part you will learn the differences between server- and client-side operating systems, VLANs, and network-attached storage. This part also covers fault tolerance, disaster recovery, configuring remote connectivity, firewalls, proxy servers, and network configuration settings.

Part IV: Operation

Part IV is all about supporting your network. In this part you will learn how to troubleshoot your network using TCP/IP utilities and how to troubleshoot remote connectivity. In this part you will also learn client- and server-side network configurations along with wiring troubleshooting tools and using diagnostic utilities. The end of this part covers network troubleshooting such as the different techniques used to identify and isolate a network problem. You will also learn how to troubleshoot network topology issues, client connectivity problems, and wiring and infrastructure.

CD-ROM

The compact disc included with this book contains some excellent resources and programs. You'll find this entire book in Adobe PDF format and a variety of different programs that I hope you will find useful. To find out more about the CD-ROM, please see Appendix A.

How Each Chapter Is Structured

This book is structured and designed into the specific elements that will provide you with the best possible learning and exam-preparation experience.

Here are the elements you'll find in each chapter:

- ◆ The complete exam objectives that are covered in the chapter
- ◆ A Chapter Pre-Test to test your knowledge before reading the chapter
- ◆ Clear, concise text on each topic
- ◆ Screenshots and graphics that are worth more than a thousand words
- ◆ Summary
- ◆ A comprehensive Study Guide for review

How to Use This Book

This book can be used either by individuals working independently or by groups in a formal classroom setting.

For best results, I recommend the following plan of attack as you use this book: First, take the Chapter Pre-Test, and then read the chapter and the Summary. Use this summary to see if you really understand the key concepts. If you don't, go back and reread the section(s) that you're not clear on. Then do all of the Assessment Questions and Scenarios at the end of the chapter. Remember, the important thing is to master the tasks that are tested by the exams.

If you feel that you already know the chapter contents before reading, try the Assessment Questions and Scenarios at the end of the chapter to test your knowledge. If you find that you are having trouble with certain topics, you should probably read the topics of the chapter you aren't clear on. Remember that even if you feel you know a topic very well, the exam objectives are the most important part of your studying process.

The chapters of this book are designed to be studied sequentially. In other words, it's best if you complete Chapter 1 before you proceed to Chapter 2. However, each chapter's topic can be studied individually, if desired.

After you've completed your study of the chapters and reviewed the Assessment Questions in the book, use the test engine on the compact disc included with this book to get some experience answering practice questions. The practice questions will help you assess how much you've learned from your study and will also familiarize you with the type of exam questions you'll face when you take the real exam. After you identify a weak area, you can restudy the corresponding chapters to improve your knowledge and skills in that area.

Prerequisites

Although this book is a comprehensive study and exam preparation guide, it doesn't start at ground zero. I assume that you have the following knowledge and skills at the outset:

- ◆ Knowledge of basic computer terminology and functions
- ◆ Basic mouse and keyboard skills: being able to left-click, right-click, double-click; use the pointer, type special characters; use the function keys, keypad, and so on
- ◆ Knowledge of basic computer hardware, software applications, and operating systems

If you meet these prerequisites, you're ready to begin this book.

Conventions Used in This Book

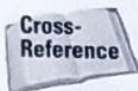
Every book has its own set of conventions, so I'll explain the icons I've used in this book to you right up front.

You'll see icons throughout each chapter. Six different types of icons are used in this book. Below are the explanations of each icon:



Caution

This icon warns you that something unfortunate could happen if you're not careful. It also points out information that could save you a lot of grief. It's often easier to prevent a tragedy than to fix it afterwards.



Cross-Reference

This icon points you to another place in this book for more coverage of a particular topic. It may point you back to a previous chapter where important material has already been covered, or it may point you ahead to let you know that a topic will be covered in more detail later on.



Exam Tip

This icon points out important information or advice for those preparing to take the Network+ certification exam.



In the Real World

Sometimes things work differently in the real world than books—or product documentation—say they do. This icon draws your attention to the author's real-world experiences, which will hopefully help you on the job if not on the Network+ certification exam.



Tip

This icon draws your attention to a little piece of friendly advice, a helpful fact, a shortcut, or a bit of personal experience that might be of use to you.

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