国外优质职业教育资源教学用书

操作系统实用教程

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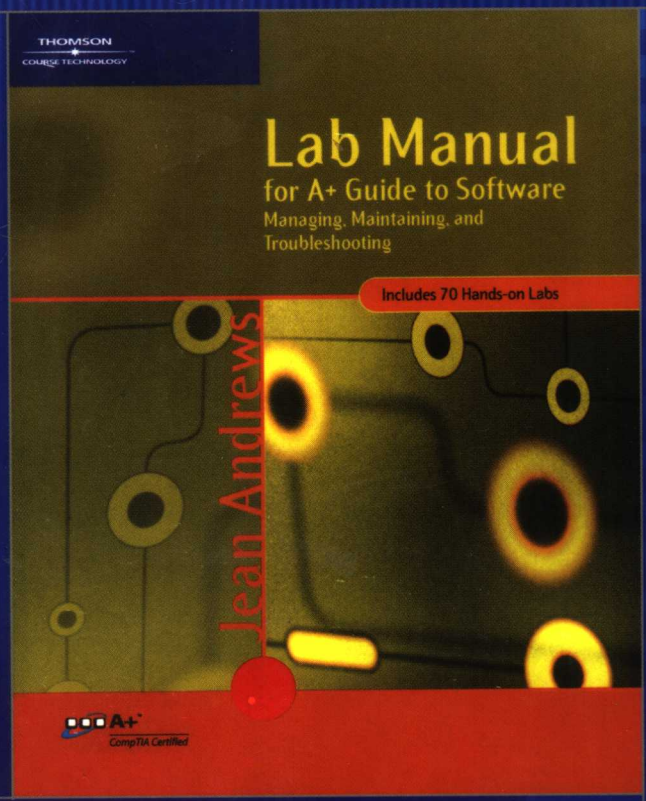
Lab Manual for A+ Guide to Software

Managing, Maintaining, and Troubleshooting

Jean Andrews



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Jean Andrews

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2002年7月，国务院召开了全国职业教育工作会议。为了贯彻职教会关于“积极引进国外优质的职业教育资源”的精神，落实教育部周济部长和王湛副部长关于引进国外职业教育教材是“坚持开放要有新局面的一个好举措”、“要把这项工作放在全国职教教材的大体系中全面考虑和规划”的重要批示，高等教育出版社在教育部高等教育司、职业教育与成人教育司的大力支持下，准备系列出版“国外优质职业教育资源教学用书”，包括专业教材、实训教材以及具有鲜明职业教育特色的课程模式教材。信息类引进教材作为引进教材系列的第一批，共有6本书。这套教材的特点是：

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引进国外优质的职业教育资源是高等教育出版社职业教育教材建设新的尝试，是迈向国际化的重要一步。今后，我们在引进国外教材版权的基础上，还要进一步引进国外优秀的作者资源，加快我国职业教育与国际接轨的步伐。同时，我们还将继续努力，将更多的引进教材推荐给高职高专院校，为促进中国高职高专教育的发展贡献力量。

高等教育出版社

2003年5月

PREFACE

This Lab Manual is designed to be the very best tool on the market to help you get the hands-on practical experience you need to learn to install, troubleshoot, and repair the operating systems used by personal computers. It is designed to be used along with *A+ Guide to Software: Managing, Maintaining, and Troubleshooting,* by Jean Andrews. It has more than 70 labs, each of which target a very practical problem you are likely to face in the "real world" when supporting PC operating systems. You will learn to use the command prompt and learn to support Windows 98, Windows NT Professional, Windows 2000 Professional, and Windows XP Professional. In addition, you will be introduced to the Mac and Linux operating systems. Each chapter contains labs that are designed to provide the structure needed by the novice, as well as labs that challenge the experienced and inquisitive student.

This book helps prepare you for the revised A+ Certification Operating System Technologies examination offered through the Computer Technology Industry Association (CompTIA). Because the popularity of this certification credential is quickly growing among employers, obtaining certification increases your ability to gain employment, improve your salary, and enhance your career. To find more information about A+ Certification and its sponsoring organization, CompTIA, go to the CompTIA Web site at *www.comptia.org*.

Whether your goal is to become an A+ certified technician, or become a PC operating system support technician, the *Lab Manual for A+ Guide to Software*, along with the *A+ Guide to Software: Managing, Maintaining and Troubleshooting* textbook, will take you there!

FEATURES

In order to ensure a successful experience for both instructors and students, this book includes the following pedagogical features:

- **Objectives**—Every lab opens with learning objectives that set the stage for students to absorb the lessons of the lab.

- **Materials Required**—This feature outlines all the materials students need to complete the lab successfully.
- **Activity Background**—A brief discussion at the beginning of each lab provides important background information.
- **Estimated Completion Time**—To help students plan their work, each lab includes an estimate of the total amount of time required to complete the activity.

Activity—Detailed, numbered steps walk students through the lab. These steps are divided into manageable sections, with explanatory material between each section.

- **Review Questions**—Exercises at the end of each lab help students test their understanding of the lab material.
- **Web Site**—For updates to this book and information about other A+ and PC Repair products, go to www.course.com/pcrepair.

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I would also like to extend my sincere appreciation to Christine Spillett, Christian Kunciw, Lisa Egan, and all the Course Technology staff for their instrumental roles in the development of this Lab Manual.

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Thank you to Scott Johns, Jennifer Dark, and Sarah Sambol, who were with me all the way as this book was written. Scott, drawing on his experience as a PC support technician in the military, is credited with the ideas for many of these labs. This book is dedicated to the covenant of God with man on earth.

— Jean Andrews, Ph.D.

CLASSROOM SETUP

Lab activities have been designed to progressively explore several operating systems so that you can install and use Windows 98, followed by Windows NT Professional, Windows 2000 Professional and Windows XP. Lastly, you will take a brief look at the Mac and Linux operating systems.

Most labs take 30 to 45 minutes; a few may take a little longer. For several of the labs, your classroom should be networked and provide access to the Internet. When access to the Windows setup files is required, these files can be provided on the Windows installation CD or on a network drive made available to the PC.

The minimum hardware requirements for Windows 98 are:

- 90 MHz or better Pentium-compatible computer
- 24 MB of RAM
- 195-MB hard drive

The minimum hardware requirements for Windows NT Professional are:

- 90 MHz or better Pentium-compatible computer
- 16 MB of RAM
- 125-MB hard drive

Additional setup notes on Windows NT Professional:

- Install Windows NT Professional on a FAT partition and provide an additional NTFS partition for data.
- You will need a user account with administrative privileges

The minimum hardware requirements for Windows 2000 are:

- 133 MHz or better Pentium-compatible computer
- 64 MB of RAM
- 2-GB hard drive

Additional setup notes on Windows 2000 Professional:

- You will need a user account with administrative privileges
- An NTFS partition that might or might not be the partition where Windows 2000 is installed

The minimum hardware requirements for Windows XP are:

- 233 MHz or better Pentium-compatible computer (300 MHz preferred)
- 64 MB of RAM (128 MB preferred)
- 1.5-MB hard drive (2-GB preferred)

Additional setup notes on Windows 2000 Professional:

- You will need a user account with administrative privileges

A few of the labs focus on special hardware. For example, one lab requires a CD-ROM drive, sound card and speakers be installed and another lab uses a PC camera, a sound card, microphone and speakers. Also, one lab requires a modem and a working phone line, and another lab requires a parallel cable.

LAB SETUP INSTRUCTIONS

Configuration Type and Operating Systems

Each lab begins with list of required materials. Before beginning a lab activity, verify that each student group or individual has access to the needed materials. Then, make sure that the proper operating system is installed and in good health. Note that in some cases, it is not necessary that an operating system be installed. When needed, the Windows setup files can be provided on the Windows CD, on a network drive, or, in some cases, on the local hard drive.

Protect Data

In several labs, it is possible that data on the hard drive might get lost or corrupted. For this reason, it is important that valuable data stored on the hard drive is backed up to another media.

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CHAPTER ONE

1 INTRODUCING AND COMPARING OPERATING SYSTEMS

Labs included in this chapter

- Lab 1.1 Determine Hardware Compatibility with Windows XP
- Lab 1.2 Examine Files and Directories
- Lab 1.3 Compare Windows Versions using the Microsoft Web Site
- Lab 1.4 Investigate Linux
- Lab 1.5 Explore the Macintosh World

LAB 1.1 DETERMINE HARDWARE COMPATIBILITY WITH WINDOWS XP

Objectives

The goal of this lab is to help you determine if your hardware is compatible with Windows XP. After completing this lab, you will be able to:

- Use Windows to identify system components
- Find and use the Microsoft Hardware Compatibility List (HCL)

Materials Required

This lab will require the following:

- Windows 9x or Windows 2000 operating system
- Internet access

Activity Background

You can't always assume your operating system will support your hardware. This is especially true of older devices, because software developers need to focus on supporting the most capable and popular devices. You can verify that Microsoft software supports your hardware by checking Microsoft's Hardware Compatibility List (HCL). The HCL, which can be found at www.microsoft.com/hcl/default.asp, includes only devices whose drivers were written by Microsoft, or devices whose drivers have been tested and approved by Microsoft. In this lab you will use Device Manager to inventory some devices in a system. Then you will check the HCL to see if the system's devices are supported by Windows XP.

Estimated completion time: **30 minutes**

ACTIVITY

To use Device Manager to inventory your system, follow these steps:

1. Open the **Control Panel** and then double click the **System** icon.
2. For Windows 9x, select the **Device Manager** tab. (For Windows 2000, select the **Hardware** tab and then click the **Device Manager** button.) The Device Manager window opens.
3. In Device Manager, devices are arranged by categories. To see what kind of video adapter is installed on your system, click the + sign to the left of "Display Adapters."

4. Select your video adapter and then click the **Properties** button. Information about the adapter's model and manufacturer appear. Record that information here.

_____

_____

5. Use Device Manager to find similar information for your network adapter, modem card, or sound card and record that information here. _____

_____

_____

Now that you have a list of devices installed on your system, check the HCL to determine if these devices are supported by Windows XP. Follow these steps:

1. Open your browser and go to *www.microsoft.com/hcl/default.asp.*
2. Click the text box, and replace "All Products" with the specific information about your video adapter that you learned from Device Manager.
3. Click the **In the following types** list arrow and select the correct category in the drop-down list.
4. Click **Search Now**. A list of devices appears.
5. Verify you have found your device by verifying that the correct manufacturer is listed.
6. Look to the right to see if the device has an XP logo symbol or a compatible symbol under the XP column. Either one indicates that the device is compatible with XP.
7. Add a note to your list of devices above indicating whether or not the device is compatible with Windows XP.
8. Check the other devices in your list, and note whether they are compatible with Windows XP.

Review Questions

1. Explain how to compile a list of devices installed on your system.

_____

_____

_____

2. How are devices grouped in Device Manager? _____

3. What does "HCL" stand for? _____

4. If a device is not listed in the HCL, what are your options when installing Windows XP? List at least two possibilities. _____

5. Does the hardware in your system qualify for Windows XP? _____

LAB 1.2 EXAMINE FILES AND DIRECTORIES

Objectives

The goal of this lab is to use different methods to examine files and directories. After completing this lab, you will be able to:

- Use the command line to view information about files and directories
- Use My Computer to view information about files and directories
- Display information about files and directories in other ways

Materials Required

This lab will require the following:

- Windows 9x or Windows 2000 operating system

Activity Background

You can access information about the file structure of a PC in several ways. From the command line, you can use the Dir command to list files and directories. In Windows, you can use Explorer or My Computer to view the same information. In the following activity, you will practice using the Dir command and My Computer.

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