

Course overview

CompTIA A+ 220-801

Official Study Guide

(G183eng ver092)

Overview

CompTIA A+ courses are intended for students wishing to qualify with CompTIA A+ Certification. A+ certification is designed to help students become entry-level IT technicians. A+ Certification is internationally endorsed and recognized as the only benchmark vendor-neutral qualification for PC support and troubleshooting. Indeed, A+ Certification is a prerequisite qualification for employment (and is endorsed) by many leading computer manufacturers and vendors on a global basis.

Successful candidates will have the knowledge required to assemble components based on customer requirements, install, configure and maintain devices, PCs and software for end users, understand the basics of networking and security/forensics, properly and safely diagnose, resolve and document common hardware and software issues while applying troubleshooting skills. Successful candidates will also provide appropriate customer support and understand the basics of virtualization, desktop imaging, and deployment.

CompTIA A+ Syllabus

This 4-day hands-on course is designed to prepare students for the 220-801 A+ exam. It focuses on PC, laptop, printer, and network hardware technologies and support procedures.

Courseware with Integrated Learning from Professor Messer

Professor Messer has long been a web hero for CompTIA certification students. For many years, Professor Messer has provided video-based training courses for CompTIA certifications. With professionally-produced lessons covering the full exam objectives and online forums, Professor Messer is a trusted online source for exam information.

Now, gtslearning has partnered with Professor Messer to take this learning to a new level. You will be able to study from the gtslearning courseware and link to the appropriate training video (by QR code, hyperlink or typing short URL) for further explanation. Equally, a student studying from the Professor Messer video course will be able to easily follow his video presentations using the same CompTIA CAQC Official courseware.



Certification track

This courseware bears the seal of CompTIA Approved Quality Content. This seal signifies this content covers 100% of the exam objectives and implements important instructional design principles. CompTIA recommends multiple learning tools to help increase coverage of the learning objectives. The contents of this training material were created for the CompTIA A+ Certification 220-801 exam covering the 2012 Edition A+ certification exam objectives.



Objectives

On course completion, students will be able to:

- Identify types and characteristics of PC and laptop components, including motherboard, CPU, memory, and storage, input, and output devices.
- Install and configure peripheral devices and system components.
- Install and configure print devices.
- Install and configure wired and wireless LAN links and internet access devices.
- Perform basic PC maintenance while working safely and responsibly.
- Communicate effectively with customers.

Target audience

This course is intended for students wishing to qualify with CompTIA A+ Certification for PC Support professionals. It is also suitable for students wanting to improve their skills in PC support and administration. By completing this course, students will also be assisted with entry into a career in ICT. This course will particularly benefit students pursuing a career in supporting desktop personal computer users, in job roles such as Support Engineer, Maintenance Engineer, Desktop Engineer, Computer Administrator, or PC Support Analyst. Study of the course can also help to prepare for other, similar technical support qualifications and act as groundwork for more advanced training, including CompTIA Network+ or CompTIA Server+, CCNA, and MCSE.

Course prerequisites

Students should have successfully completed the Strata IT Fundamentals course or have some basic experience of using a PC, Windows, and browsing the web. Specifically, it is recommended that students have the following skills and knowledge before starting this course:

- Use a keyboard and mouse.
- Recognize the main components of a PC and different data media such as USB drives and DVD.
- Start the computer and navigate the desktop.
- Use Windows Explorer to create directories and subdirectories and manage files.
- Use Internet Explorer to view websites.

Course contents

The course consists of two volumes, with a study volume, containing indexed notes and review questions, and a companion volume, containing exam objectives mapping, exam information, practical labs, answers to review questions, and a comprehensive glossary. The course also comes with an online practice exam.

An instructor edition of the course is available with margin notes and tips for the trainer. Access to course resources (setup guides and data, PowerPoint slides, timetables, and extra exam information) is also available, subject to meeting minimum order requirements. A full set of classroom labs is provided to training companies and there are also options for hosted labs and self-paced labs to accompany the course.

Module 1 / Peripherals and Adapters

- **Safety Procedures** • Health and Safety Laws • Electrical Safety • Cable Management • Lifting Techniques and Weight Limitations • Static Electricity and ESD • **Labs** • Implementing an Anti-ESD Service Kit
- **Motherboard Components** • System Case Types • Disassembling a PC • Motherboard Layout • Bus Architecture • Motherboard Components
- **Power Supplies** • Electrical Circuits • Power Supply Unit (PSU) • Installing a Power Supply Unit • **Labs** • Identifying PC Components
- **Connection Interfaces** • I/O Ports and Cables • Legacy Port Types • USB Ports • SCSI • Display Connectors and Cable Types • Audio Connectors • **Labs** • Identifying PC Ports

- **Peripherals and Expansion Slots** • Basic Input Devices • Touch Screens and Digitizers • Installing and Configuring Peripherals • Expansion Bus • Adapter Cards
- **Output and Multimedia Devices** • Display Devices • Comparing Display Technologies • Video Adapters • Audio Devices • Multimedia Input Devices • **Labs** • Connecting Peripheral Devices

Module 2 / System Components

- **Mass Storage Devices** • Storage Devices • Hard Drives • Host Bus Adapters • Installing Disk Drives • RAID
- **Removable Storage Devices** • Optical Disc Storage • Flash Memory • Floppy Drives • Tape Drives • **Labs** • Adding Storage Devices
- **System Memory** • Memory Types • Memory Characteristics • Installing and Upgrading Memory • **Labs** • Upgrading Memory
- **Processors** • Central Processing Unit (CPU) • CPU Architectures • Other CPU Features • CPU Packaging • Cooling Systems • Removing a CPU • Installing or Upgrading a CPU
- **BIOS** • CMOS Setup • BIOS Component Information • Configuring the Boot Sequence • Configuring Onboard Devices • BIOS Security • Firmware Upgrades • Using Built-in Diagnostics • **Labs** • CMOS Setup
- **Custom Configuration** • Configuring Computers for Business • Configuring Computers for Home Use

Module 3 / Laptops and Printers

- **Laptops** • Portable Computers • Laptop Components • Upgrading Laptops • Power Supplies for Portable Computers
- **Printer Types** • Printer Types • Laser Printers • Inkjet Printers • Dot Matrix Printers • Thermal Transfer Printers • Scanners
- **Installing and Configuring Printers** • Installing and Configuring a Printer • Maintaining Printers • Routine Maintenance of Laser Printers • Maintaining Other Printer Types • **Labs** • Installing a Printer
- **Preventive Maintenance** • Environmental Controls • Power Problems • MSDS Documentation • Disposal and Recycling • **Labs** • Cleaning and Preventive Maintenance
- **Professionalism and Communication** • Customer Service Skills • Communication Skills • Professionalism • Handling Customer Complaints • Incident Response Policy • **Labs** • Upgrading the Graphics Adapter • Removing and Installing FRUs

Module 4 / Networking Essentials

- **Network Hardware** • Basic Network Concepts • Network Topologies • The OSI Model • Network Components • Twisted-Pair Network Cabling • Other Network Cabling Types
- **TCP/IP Essentials** • TCP/IP • Internet Protocol and IP Addressing • Configuring TCP/IP • IP Version 6 • TCP and UDP • DNS • Internet Application Protocols • Other TCP/IP Application Protocols
- **Wireless Networking** • Wireless Networks • WLAN Security • Configuring an Access Point • Wireless Communication Ports • **Labs** • Building a Network
- **Internet Access** • The Internet • Accessing the Internet • Dial-up Access • ISDN • xDSL (Digital Subscriber Line) • Other Broadband Services • Configuring Firewalls • Voice-over-IP

Course overview

CompTIA A+ 220-802

Official Study Guide

(G185eng ver033)

Overview

CompTIA A+ courses are intended for students wishing to qualify with CompTIA A+ Certification. A+ certification is designed to help students become entry-level IT technicians. A+ Certification is internationally endorsed and recognized as the only benchmark vendor-neutral qualification for PC support and troubleshooting. Indeed, A+ Certification is a prerequisite qualification for employment (and is endorsed) by many leading computer manufacturers and vendors on a global basis.

Successful candidates will have the knowledge required to assemble components based on customer requirements, install, configure and maintain devices, PCs and software for end users, understand the basics of networking and security/forensics, properly and safely diagnose, resolve and document common hardware and software issues while applying troubleshooting skills. Successful candidates will also provide appropriate customer support and understand the basics of virtualization, desktop imaging, and deployment.

CompTIA A+ Syllabus

This 5-day hands-on course is designed to prepare students for the 220-802 A+ exam. It focuses on supporting Microsoft Windows, configuring SOHO networks with internet access, troubleshooting, and mobile devices such as smartphones.

Courseware with Integrated Learning from Professor Messer

Professor Messer has long been a web hero for CompTIA certification students. For many years, Professor Messer has provided video-based training courses for CompTIA certifications. With professionally-produced lessons covering the full exam objectives and online forums, Professor Messer is a trusted online source for exam information.

Now, gtslearning has partnered with Professor Messer to take this learning to a new level. You will be able to study from the gtslearning courseware and link to the appropriate training video (by QR code, hyperlink or typing short URL) for further explanation. Equally, a student studying from the Professor Messer video course will be able to easily follow his video presentations using the same CompTIA CAQC Official courseware.



Certification track

This courseware bears the seal of CompTIA Approved Quality Content. This seal signifies this content covers 100% of the exam objectives and implements important instructional design principles. CompTIA recommends multiple learning tools to help increase coverage of the learning objectives. The contents of this training material were created for the CompTIA A+ Certification 220-802 exam covering the 2012 Edition A+ certification exam objectives.



Objectives

On course completion, students will be able to:

- Install and configure Microsoft Windows XP, Microsoft Windows Vista, and Microsoft Windows 7.
- Manage and optimize Windows using command line tools and administrative consoles.
- Configure and manage users, groups, and shared resources in a typical SOHO network.
- Use anti-virus tools to prevent and recover from malware infections.
- Configure access control measures, such as authentication, security policy, encryption, and firewalls.
- Diagnose and resolve Windows, PC hardware, network, and printer troubleshooting scenarios.
- Configure mobile devices, such as smartphones and tablets.

Target audience

This course is intended for students wishing to qualify with CompTIA A+ Certification for PC Support professionals. It is also suitable for students wanting to improve their skills in PC support and administration. By completing this course, students will also be assisted with entry into a career in ICT. This course will particularly benefit students pursuing a career in supporting desktop personal computer users, in job roles such as Support Engineer, Maintenance Engineer, Desktop Engineer, Computer Administrator, or PC Support Analyst. Study of the course can also help to prepare for other, similar technical support qualifications and act as groundwork for more advanced training, including CompTIA Network+ or CompTIA Server+, CCNA, and MCSE.

Course prerequisites

Students should have successfully completed the Strata IT Fundamentals course or have some basic experience of using a PC, Windows, and browsing the web. It is also recommended that you complete the 801 Support Skills course before starting this course. Specifically, it is recommended that students have the following skills and knowledge before starting this course:

- Start the computer and navigate the desktop.
- Use Windows Explorer to create directories and subdirectories and move, copy or rename files and directories and use Internet Explorer to view websites.
- Identify types and characteristics of PC components, including motherboard, CPU, memory, and storage, input, and output devices.
- Install and configure peripheral devices.
- Identify types and characteristics of portable computers.
- Install and configure print and imaging devices.
- Understand fundamental principles of implementing LANs and internet access.

Course contents

The course consists of two volumes, with a study volume, containing indexed notes and review questions, and a companion volume, containing exam objectives mapping, exam information, practical labs, answers to review questions, and a comprehensive glossary. The course also comes with an online practice exam.

An instructor edition of the course is available with margin notes and tips for the trainer. Access to course resources (setup guides and data, PowerPoint slides, timetables, and extra exam information) is also available, subject to meeting minimum order requirements. A full set of classroom labs is provided to training companies and there are also options for hosted labs and self-paced labs to accompany the course.

Module 1 / Supporting Windows 1

- **Windows Operating System** • What is an Operating System? • Windows 7 • Windows Vista • Windows XP • Windows Upgrade Paths • **Labs** • Windows 7
- **Administration Tools** • Control Panel • System Properties • Microsoft Management Consoles and Administrative Tools • Command Prompt and Text Editors • File Structure and Paths • Shut Down • Windows Registry • **Labs** • System Administration Tools
- **Managing Users** • User and Group Accounts • User Account Control • Managing User Accounts • **Labs** • Configuring Users and Groups • **Labs** • User Account Management
- **Managing Storage** • Partitions and File Systems • Disk Management Tool • Adding Arrays (Dynamic Storage) • Drive Status • Command Line Disk Management • Mount Points and Disk Images • **Labs** • Disk Management
- **Managing Files** • Windows Explorer • Folder Options • Navigating Directories at the Command Prompt • File Management using a Command Prompt • **Labs** • File Management

Module 2 / Supporting Windows 2

- **Managing Applications** • Managing Software • Managing Services • msconfig • Task Manager • **Labs** • Application Management
- **Managing Devices** • Configuring Hardware • Display Settings • Power Management • **Labs** • Device Management
- **Managing Performance** • Viewing System Information • Performance Monitor • Reliability and Performance Monitor • Advanced System Properties • **Labs** • System Management Utilities
- **Maintenance and Backup** • Maintaining and Optimizing Drives • Task Scheduler • Patch Management • Data Backup • Restoring User Profiles • **Labs** • Windows Maintenance Tasks
- **Installing Windows** • Overview of OS Installations • Installation Boot Methods • Preparing the Hard Disk • Completing an Attended Installation • Options for Deploying Windows • **Labs** • Installing and Configuring Windows XP • Installing Windows Vista
- **Virtualization** • Virtualization Basics • Purposes of Virtual Machines • Security Requirements

Module 3 / Troubleshooting Windows

- **Troubleshooting Theory** • Troubleshooting Models and Processes • Troubleshooting Procedures
- **Troubleshooting Boot Problems** • Windows Boot Process • Advanced Boot Options Menu • Troubleshooting Boot Problems • System Restore • System Recovery Tools • Command Prompt Recovery Tools • **Labs** • Boot Troubleshooting • Automated System Recovery
- **Troubleshooting Applications** • Event Viewer • Windows Error Reporting • Troubleshooting Windows Errors • **Labs** • Event Viewer
- **Viruses and Malware** • Types of Malware • Malware Symptoms • Preventing Malware Infections • Anti-Virus Software • Windows Security Tools • **Labs** • Anti-Virus Software
- **Workstation and Data Security** • Security Fundamentals • Encryption • Authentication • Workstation Security • Data Security • Physical Security • **Labs** • Account and Password Policies

Module 4 / Troubleshooting PC Hardware

- **Troubleshooting System Components** • Troubleshooting Basic Hardware Problems • Troubleshooting Power Problems • Troubleshooting POST • Troubleshooting Motherboard Components • **Labs** • Testing Hardware Components
- **Troubleshooting Storage and Video** • Troubleshooting Hard Drives • Troubleshooting Failures in RAID • Troubleshooting Display Problems • **Labs** • Diagnosing System Errors
- **Troubleshooting Laptops** • Laptop Disassembly Processes • Troubleshooting Laptops
- **Troubleshooting Printers** • Windows Printing Features • Configuring Printers • Troubleshooting Windows Print Problems • Troubleshooting Print Defects • **Labs** • Printer Maintenance

Module 5 / Supporting Networks

- **Configuring Network Connections** • Network Adapter Properties • Establishing Networking Connections • Configuring TCP/IP in Windows • Configuring a Wireless Client • Securing Networks • **Labs** • Network Adapter Properties
- **Configuring Shared Resources** • Domains and Workgroups • Configuring a Windows Client • Configuring File and Folder Sharing • Offline Files • NTFS File Permissions • Printer Sharing • Simple File Sharing and HomeGroups • Remote Access Utilities • **Labs** • Windows Networking • Remote Desktop
- **Configuring Internet Access** • Establishing Internet Connections • Configuring the Browser • Network and Host Firewalls • Windows Firewall
- **Troubleshooting Networks** • Troubleshooting Networks • Troubleshooting IP • Troubleshooting Routing and Name Resolution • Troubleshooting Network Hardware • **Labs** • Troubleshooting Networks
- **Mobile Devices** • Mobile Device Hardware • Mobile Operating Systems • Network Connectivity • Securing Mobile Devices