Computer Hardware Training (Hardware+)

(Covers all the course contents of CompTIA A+)

After competition of the Computer Hardware+ training candidate can able to appear for CompTIA A+ Certification.

[International Certification (1) CompTIA A+ 220-801]
[International Certification (2) CompTIA A+ 220-802]

What is CompTIA?

A non-profitable trade association named CompTIA (The Computing Technology Industry Association) was created in 1982.

CompTIA is the leader which provides "VENDOR-NEUTRAL IT CERTIFICATIONS" in the world.

What is CompTIA A+?

CompTIA A+ certification is starting point for career in IT which is industry standard for computer support technicians. The international, vendor-neutral certification proves competence in areas such as installation, preventative maintenance, networking, security and troubleshooting. CompTIA A+ certified technicians also have excellent customer service and communication skills to work with clients.

CompTIA A+ is part of the certification track for corporations such as Microsoft, Hewlett-Packard, Cisco and Novell. Other technology companies, including CompuCom and Ricoh, have made CompTIA A+ certification mandatory for their service technicians.

For CompTIA A+ certification you must pass two international exams;

CompTIA A+ 220-801	Covers the fundamentals of computer technology, installation and configuration of PCs, laptops and related hardware, and basic networking.
CompTIA A+ 220-802	Covers the skills required to install and configure PC operating systems, as well as configuring common features (e.g. network connectivity and email) for mobile operating systems Android and Apple iOS.

CompTIA A+ Logo usage information;

Successfully completion of two certification exams; candidate is authorized to use CompTIA A+ logo on resume and visiting cards etc.

"CompTIA A+" and Logo are proprietary of CompTIA; for more information visit CompTIA web site.

Why Computer Hardware training from Bascom Bridge?

Bascom Bridge established in the year 1999 for IT education and having all types of equipment related to Computer Hardware training. During the training 100% practical will be covered and after completion of the training candidate can appear for CompTIA A+ international certification.

Passing ratio of CompTIA A+ international examination is almost 100% of our students for last 15 years. After completion of Computer Hardware training on various devices, we also provide international exam practice session for those students and professionals who are keen to get CompTIA A+ certification with no extra cost.

Bascom Bridge does assist for the placement of Computer Hardware students. Our placement department tied up with various organizations for better placement.

Bascom Bridge is providing customized training on Computer Hardware to individual and corporate professionals.

More than 25,000 candidates have taken Computer Hardware training and Bascom Bridge is seeing their successful growth in their respective fields.

For more details about Bascom Bridge; please refer **Company Profile**.

Prerequisites

NONE

Course Duration

70 hours

After completion of Computer CompTIA A+, candidate will able to work as;

- Technical support specialist
- Field service technician
- IT support technician
- IT support administrator
- IT support specialist

Next Suggested Course;

Networking Essential (Equivalent to CompTIA Network+)

CompTIA A+ Learning options;

- Instructor-led class room training (Monday to Friday, every day 90 minutes)
- Instructor-led class room training (Weekend training,6 to 8 hours a day)
- Boot Camp
- Customize training as per learner requirement
- Training at learner's location(with setup OR Bascom Bridge's setup)
- Self-paced training through e-learning tutorials

Note:

- Computer Practical Lab with 24X7 technical support

Course Content

Personal Computers Basics (1 Hour)

- Working with PC
- System and identify computer components

Identification of PC Devices (1 Hour)

- Input Devices
- Output Devices
- System Unit
- Mass storage Devices
- Peripheral Connectors

Configure and apply BIOS settings (2 Hour)

- What is Bios
- BIOS component information
- BIOS configurations
- Configuration booting sequence of devices

Operating System (20 Hours)

- What is operating system
- Function of operating system
- File system and system file of operating system
- Configuration and installation of operating systems;
    - Dos
    - Windows 95
    - Windows 98
    - Windows XP
    - Windows Server 2003
    - Windows Vista
    - Windows 7
    - Windows 8
    - Windows Server 2008
    - Windows Server 2012
    - Red Hat Linux 4
    - Red Hat Linux 5
    - Backtrack
    - Ubuntu
- Dual configuration of Operating System
- Utility of all Operating System
- Configure Ghost of Operating System
- Troubleshooting of Operating System
    - Missing boot loader file
    - How to break administrator password
    - Install all types of software
    - How to make bootable cd and pen drive

I/O Ports (2 Hours)

- RS - 232C Standard Interface
- System Resource Settings
- Connectors
- Common Problems and T/S
- Features of USB
- USB Connectors

- Working of USB
- Devices Supported by USB
- Devices Supported by USB

Motherboard (4 Hours)

- Physical Form Factors
- Motherboard components
- System chipset and Controller
- CMOS Settings
- Power on self-test
- System resources
- Practice of CMOS setting
- PC Bus
- ISA Bus
- MCA Bus
- EISA Bus
- VESA Bus
- PCI Bus
- AGP
- AMR and CMR

Memory (6 Hours)

- Classification of Memory
- Memory Specification
- Random Access Memory
- Dynamic Ram(DRAM)
- Types of DRAM
  - DDR
  - DDR2
  - DDR3
- DRAM packages and Memory Sockets
- Static RAM and its types
- Read Only Memory
- types of ROM
- Cache Memory
- Identify Laptop Ram

Microprocessors (6 Hours)

- Microprocessors
- Logic Gates
- Number System
- System Bus
- 8085 Microprocessor
- Pentium Processor
- Processor Generations
- Pentium MMX and Pentium PRO Processors
- Pentium II Processors
- Pentium Xeon Processors
- Celeron Processors
- Pentium III Processors
- Pentium IV Processors
- Core 2 Dual & Dual core
- I3 i5 i7
- AMD Processors
- Processor Identification
- Processor Technologies

- Choosing Installing and Troubleshooting Processors
- Choosing a CPU
- Installing a CPU
- Trouble shooting a CPU

Input Devices (1 Hour)

- Keyboard
    - Layouts of Keyboard
    - Keyboard Interfaces
    - Working of Keyboard
    - Keyboard Switches
    - Keyboard Terms
    - Keyboard Troubleshooting
    - Software Issues Related to the Keyboard
- Mouse
    - Classification of Mouse
    - Different Mouse Interfaces
    - Configuring of Mouse
    - Cleaning a Mouse
- Errors and Troubleshooting
- Scanner Introduction
- Touch Screen

Hard Disk (5 Hours)

- Types Of Hard Disk
    - IDE
    - SATA
    - SCSI
    - USB
- Features of HDD
- Geometry of Hard Drive
- Hard Disk Drive Components
- Hard Disk Drive Interface
- Data Organization in Hard Disk
- Data Read and write Operation
- Data recording Technique
- Sector Transfer Mode
- Hard Disk Drive Configuration
- Hard Disk Drive setup
- File System
- Sector Organization
- Disk Maintenance Utilities
- Common errors and troubleshooting
- Practical of HDD
- SCSI Features
- SCSI Standards and Types
- SCSI Interface Components
- SCSI cables
- Termination in SCSI
- SCSI Signaling
- SCSI Configuration

Redundant Array of Inexpensive Disks (RAID) (2 Hours)

- RAID 0 Stripping Without Parity
- RAID 1
- RAID 2

- RAID 3 Stripping With Parity
- RAID 4
- RAID 5

Compact Disc Rom (2 Hours)

- Features of CD Rom
- Data Read and Write Operations
- Compact Disc Formats
- CD Rom Drive Components
- Interface Connectors
- CD Rom Drive Specifications
- Digital Video/Versatile Disks(DVD)
- Practical of CDROM

Display Adapters (2 Hours)

- Display Modes
- Video Adapter Specification
- Bus Interface
- Monitor Specifications
- LCD Monitors
- Comparison between LCD and CRT

Power Supply (1 Hour)

- Classification of Power Supplies
- Switch mode Power Supply
- Output DC Voltages
- Power Technology
- ATX Power connector
- Line Conditioners
- Testing ATX Power supply
- Need for UPS
- UPS
- Types of UPS
- Specification of UPS

Printers (5 Hours)

- Printer Classification
- Printer Specification
- Dot Matrix Printer
- Working of Dot Matrix Printers
- Control Panel of Dot Matrix Printers
- DMP Troubleshooting
- Practical of Dot Matrix Printers
- Types of Inkjet Printer
- Parts of inkjet Printer
- Technologies in inkjet Printer
- Inkjet Printer Consumables
- Characteristics of Laser Printer
- Components of Laser Printer
- Working of Laser Printer
- Data Communication in Laser Printer
- Laser Printer Consumables
- Environmental Issues and Troubleshooting

Assembling PC (5 Hours)

- Materials Required For Assembling
- Precautions for Assembling and Disassembling the PC
- Assembling Procedure
- Disassembling a PC
- Practice on Assembling and Disassembling a PC
- Practice on Assembling and Disassembling a PC

Networking (5 Hours)

- Advantage of Network
- Computer Network Models
- Network Topologies
- Network Hardware
- Protocols
- Installing and configuring NIC
- Internet

CompTIA A+ Acronyms

Introduction

The following is a list of acronyms which appear on the CompTIA A+ exams. Candidates are encouraged to review the complete list and attain a working knowledge of all listed acronyms as a part of a comprehensive exam preparation program.

ACRONYM	SPELLED OUT
AC	alternating current
ACL	access control list
ACPI	advanced configuration power interface
ACT	activity
ADSL	asymmetrical digital subscriber line
AGP	accelerated graphics port
AHCI	Advanced host controller interface
AMD	advanced micro devices
AP	Access point
APIPA	automatic private internet protocol addressing
APM	advanced power management
ARP	address resolution protocol
ASR	automated system recovery
ATA	advanced technology attachment
ATAPI	advanced technology attachment packet interface
ATM	asynchronous transfer mode
ATX	advanced technology extended
A/V	Audio Video
BIOS	basic input/output system
BNC	Bayonet-Neill-Concelman or British Naval Connector
BTX	balanced technology extended
CAPTCHA	Completely Automated Public Turing Test To Tell Computers & Humans Apart
CCFL	Cold Cathode Fluorescent Lamp
CD	compact disc
CD-ROM	compact disc-read-only memory
CD-RW	compact disc-rewritable
CDFS	compact disc file system
CFS	Central File System, Common File System, Command File System
CIFS	Common Internet File System

CMOS	complementary metal-oxide semiconductor
CNR	Communications and Networking Riser
COMx	communication port (x=port number)
CPU	central processing unit
CRIMM	Continuity Rambus Inline Memory Mode
CRT	cathode-ray tube
DAC	discretionary access control
DB-25	serial communications D-shell connector, 25 pins
DB-9	9 pin D shell connector
DC	direct current
DDOS	distributed denial of service
DDR	double data-rate
DDR RAM	double data-rate random access memory
DDR SDRAM	double data-rate synchronous dynamic random access memory
DFS	distributed file system
DHCP	dynamic host configuration protocol
DIMM	dual inline memory module
DIN	Deutsche Industrie Norm
DIP	dual inline package
DLT	digital linear tape
DLP	digital light processing
DMA	direct memory access
DMZ	demilitarized zone
DNS	domain name service or domain name server
DOS	denial of service
DRAM	dynamic random access memory
DSL	digital subscriber line
DVD	digital video disc or digital versatile disc
DVD-RAM	digital video disc-random access memory
DVD-ROM	digital video disc-read only memory
DVD-R	digital video disc-recordable
DVD-RW	digital video disc-rewritable
DVI	digital visual interface
ECC	error correction code
ECP	extended capabilities port
EEPROM	electrically erasable programmable read-only memory
EFS	encrypting file system
EIDE	enhanced integrated drive electronics
EMI	electromagnetic interference
EMP	electromagnetic pulse
EPROM	erasable programmable read-only memory
EPP	enhanced parallel port
ERD	emergency repair disk
ESD	electrostatic discharge
EVGA	extended video graphics adapter/array
EVDO	evolution data optimized or evolution data only
FAT	file allocation table
FAT12	12-bit file allocation table
FAT16	16-bit file allocation table
FAT32	32-bit file allocation table
FDD	floppy disk drive
Fn	Function (referring to the function key on a laptop)
FPM	fast page-mode
FRU	field replaceable unit
FSB	Front Side Bus
FTP	file transfer protocol
FQDN	fully qualified domain name
Gb	gigabit
GB	gigabyte

GDI	graphics device interface
GHz	gigahertz
GUI	graphical user interface
GPS	global positioning system
GSM	global system for mobile communications
HAL	hardware abstraction layer
HAV	Hardware Assisted Virtualization
HCL	hardware compatibility list
HDD	hard disk drive
HDMI	high definition media interface
HPFS	high performance file system
HTML	hypertext mark-up language
HTPC	Home theatre PC
HTTP	hypertext transfer protocol
HTTPS	hypertext transfer protocol over secure sockets layer
I/O	input/output
ICMP	internet control message protocol
ICR	intelligent character recognition
IDE	integrated drive electronics
IDS	Intrusion Detection System
IEEE	Institute of Electrical and Electronics Engineers
IIS	Internet Information Services
IMAP	internet mail access protocol
IP	internet protocol
IPCONFIG	internet protocol configuration
IPP	internet printing protocol
IPSEC	internet protocol security
IR	infrared
IrDA	Infrared Data Association
IRQ	interrupt request
ISA	industry standard architecture
ISDN	integrated services digital network
ISO	Industry Standards Organization
ISP	internet service provider
JBOD	just a bunch of disks
Kb	kilobit
KB	Kilobyte or knowledge base
LAN	local area network
LBA	logical block addressing
LC	Lucent connector
LCD	liquid crystal display
LDAP	lightweight directory access protocol
LED	light emitting diode
Li-on	lithium-ion
LPD/LPR	line printer daemon / line printer remote
LPT	line printer terminal
LVD	low voltage differential
MAC	media access control / mandatory access control
MAPI	messaging application programming interface
MAU	media access unit, media attachment unit
Mb	megabit
MB	megabyte
MBR	master boot record
MBSA	Microsoft Baseline Security Analyzer
MCA	Micro Channel Architecture
MFD	multi-function device
MFP	multi-function product
MHz	megahertz
MicroDIMM	micro dual inline memory module

MIDI	musical instrument digital interface
MIME	multipurpose internet mail extension
MIMO	Multiple Input Multiple Output
MMC	Microsoft management console
MMX	multimedia extensions
MP3	Moving Picture Experts Group Layer 3 Audio
MP4	Moving Picture Experts Group Layer 4
MPEG	Moving Picture Experts Group
MSCONFIG	Microsoft configuration
MSDS	material safety data sheet
MUI	multilingual user interface
NAC	network access control
NAS	network-attached storage
NAT	network address translation
NetBIOS	networked basic input/output system
NetBEUI	networked basic input/output system extended user interface
NFS	network file system
NIC	network interface card
NiCd	nickel cadmium
NiMH	nickel metal hydride
NLX	new low-profile extended
NNTP	network news transfer protocol
NTFS	new technology file system
NTLDR	new technology loader
NTP	Network Time Protocol
OCR	optical character recognition
OEM	original equipment manufacturer
OLED	Organic Light Emitting Diode
OS	operating system
PAN	personal area network
PATA	parallel advanced technology attachment
PC	personal computer
PCI	peripheral component interconnect
PCIe	peripheral component interconnect express
PCIX	peripheral component interconnect extended
PCL	printer control language
PCMCIA	Personal Computer Memory Card International Association
PDA	personal digital assistant
PGA	pin grid array
PGA2	pin grid array 2
PII	Personally Identifiable Information
PIN	personal identification number
PKI	public key infrastructure
PnP	plug and play
POP3	post office protocol 3
PoS	Point of Sale
POST	power-on self test
POTS	plain old telephone service
PPP	point-to-point protocol
PPTP	point-to-point tunneling protocol
PRI	primary rate interface
PROM	programmable read-only memory
PS/2	personal system/2 connector
PSTN	public switched telephone network
PSU	power supply unit
PVC	permanent virtual circuit
PXE	preboot execution environment
QoS	quality of service
RAID	redundant array of independent (or inexpensive) discs

RAM	random access memory
RAS	remote access service
RDRAM	RAMBUS® dynamic random access memory
RDP	Remote Desktop Protocol
RF	radio frequency
RFI	radio frequency interference
RGB	red green blue
RIMM	RAMBUS® inline memory module
RIP	routing information protocol
RIS	remote installation service
RISC	reduced instruction set computer
RJ	registered jack
RJ-11	registered jack function 11
RJ-45	registered jack function 45
RMA	returned materials authorization
ROM	read only memory
RS-232	recommended standard 232
RS-232C	recommended standard 232
RTC	real-time clock
SAN	storage area network
SAS	Serial Attached SCSI
SATA	serial advanced technology attachment
SC	subscription channel
SCP	secure copy protection
SCSI	small computer system interface
SCSI ID	small computer system interface identifier
SD card	secure digital card
SDRAM	synchronous dynamic random access memory
SEC	single edge connector
SFC	system file checker
SFF	Small Form Factor
SGRAM	synchronous graphics random access memory
SIMM	single inline memory module
SLI	scalable link interface or system level integration or scanline interleave mode
S.M.A.R.T.	self-monitoring, analysis, and reporting technology
SMB	server message block or small to midsize business
SMTP	simple mail transfer protocol
SNMP	simple network management protocol
SoDIMM	small outline dual inline memory module
SOHO	small office/home office
SP	service pack
SP1	service pack 1
SP2	service pack 2
SP3	service pack 3
SP4	service pack 4
SPDIF	Sony-Philips digital interface format
SPGA	staggered pin grid array
SRAM	static random access memory
SSH	secure shell
SSID	service set identifier
SSL	secure sockets layer
ST	straight tip
STP	shielded twisted pair
SVGA	super video graphics array
SXGA	super extended graphics array
TB	terabyte
TCP	transmission control protocol
TCP/IP	transmission control protocol/internet protocol

TDR	time domain reflectometer
TFTP	trivial file transfer protocol
TKIP	Temporal Key Integrity Protocol
TPM	trusted platform module
UAC	user account control
UART	universal asynchronous receiver transmitter
UDF	user defined functions or universal disk format or universal data format
UDMA	ultra direct memory access
UDP	user datagram protocol
UNC	universal naming convention
UPS	uninterruptible power supply
URL	uniform resource locator
USB	universal serial bus
USMT	user state migration tool
UTP	unshielded twisted pair
UXGA	ultra extended graphics array
VESA	Video Electronics Standards Association
VFAT	virtual file allocation table
VGA	video graphics array
VM	Virtual Machine
VoIP	voice over internet protocol
VPN	virtual private network
VRAM	video random access memory
WAN	wide area network
WAP	wireless application protocol
WEP	wired equivalent privacy
WIFI	wireless fidelity
WINS	windows internet name service
WLAN	wireless local area network
WPA	wireless protected access
WPS	WiFi Protected Setup
WUXGA	wide ultra-extended graphics array
XGA	extended graphics array
ZIF	zero-insertion-force
ZIP	zigzag inline package

Proposed Hardware and Software List

Equipment

- iPad tablet
- Android tablet
- Laptop
- Desktop
- Monitors
- SOHO Router/switch
- Access point
- Printer (laser/wireless)
- Power strips
- Surge suppressor
- UPS

Spare parts/hardware

- Motherboards
- RAM
- Hard drives
- Power supplies

- Video cards
- Sounds cards
- Network cards
- Wireless NICs
- Fans/cooling devices
- CPUs
- Connectors/cables
- Adapters
- Network cables/connectors
- AC adapters
- Optical drives
- Jumpers/screws/stand-offs
- Cases
- Bulk cable
- Maintenance kit

Tools

- Screw drivers
- Multimeter
- Wire cutters
- Punchdown tool
- Crimper
- Power supply tester
- Cable stripper
- POST cards
- Standard technician toolkit
- ESD strap

Software

- Operating system disks (Win XP, Vista, and Win 7)
- Antivirus software
- Virtualization software
- Anti-malware
- Driver software
- Anti-spyware