



Certification: HP ATA – Servers & Storage

Overview

Achieving an HP certification provides relevant skills that can lead to a fulfilling career in Information Technology. HP Accredited Technical Associate (ATA) certifications are designed to provide practical experience with HP and industry standard technologies as an integrated part of an academic learning experience. HP certifications go well beyond simple concepts or product knowledge and focus on the application of knowledge in real world environments. HP ATA certifications teach and assess the ability to design, implement and support IT solutions in a small and medium business context. HP ATA certification directly applies to a broad range of IT job roles including:

- IT Architects
- System Engineers
- System Administrators
- Technical Support Engineers

Learning And Assessment Content

The HP ATA – Servers & Storage certification provides the knowledge and experience required to discover a customer’s business objectives and to design an application hosting and data storage solution that meets the customer’s requirements. In addition, knowledge and skill to deploy and troubleshoot the solution are also included. The following detailed testing and learning objectives are covered in the courseware and the exams.

Section	Objective
1. Explain and recognize industry standard server technologies and their implications on customer needs	1.1 Describe processor technologies and their implications on customer needs <ul style="list-style-type: none"> • Describe and contrast the technologies used in the current processors • Describe and contrast recommended usage of Intel and AMD based architectures • Identify the installed processor, its stepping, cache types and sizes (L1, L2, L3), and speed • Describe the processor power and cooling components and identify the implications on server identification • Identify and describe multi-processing architecture
	1.2 Describe memory technologies and their implications on customer needs <ul style="list-style-type: none"> • Describe the differences between the various memory types (single rank, dual rank, DDR, SDRAM, DDR2, DDR3, CAS latency, Fully Buffered & legacy types) • Describe the technologies to handle memory errors (e.g. ECC) • Describe the technologies to enhance memory performance (e.g. memory interleaving) • Identify the installation guideline/rules for memory for a given server • Describe the importance of BIOS as it relates to memory configuration
	1.3 Describe common server system architectures and their implications on customer needs <ul style="list-style-type: none"> • Describe the Intel-based system architecture • Describe the unique characteristics of AMD-based system architecture • Describe the system I/O bus types • Recognize the components in a system and where they fit in the system architecture
	1.4 Describe common storage technologies and their implications on customer needs <ul style="list-style-type: none"> • Describe and recognize ATA technologies • Describe and recognize SCSI technologies • Compare and contrast the performance, reliability and compatibility between ATA and

	<p>SCSI based storage (both parallel and serial)</p> <ul style="list-style-type: none"> Describe and recognize networked storage technologies Describe and contrast the DAS, NAS and SAN storage implementations and their implications on customer needs Explain storage configuration and redundancy options and their implications on customer needs
	<p>1.5 Describe networking technologies as they relate to Server implementation and performance, and their implications on customer needs</p> <ul style="list-style-type: none"> Describe NIC selection and teaming Describe NIC Failover and trunking Describe Network Virtualization
	<p>1.6 Describe various types of server applications, their functionality and their configuration profile</p> <ul style="list-style-type: none"> Including File/Print serves, Web/FTP servers (static, dynamic); proxy servers, DB servers, network services, Terminal servers, Messaging servers, Virtual servers and Authentication services
	<p>1.7 Identify and describe the common industry OS and application solutions stacks currently supported by x86/x64 systems</p> <ul style="list-style-type: none"> Identify and describe the currently supported Microsoft solutions Identify and describe the currently supported solutions for Linux/UNIX Describe the differences between Open Source and Commercial software and their implications on customer needs
	<p>1.8 Describe the architecture elements of industry standard operating systems</p> <ul style="list-style-type: none"> Describe the purpose of a kernel Describe the security manager Describe drivers Describe shared libraries Describe the GUI Describe file systems and disk/file system structure Describe the Windows registry (backup/restore, common fixes) Explain large memory support (/3GB, PAE, 64-bit, etc.)
	<p>1.9 Describe Server Hardware Management Technologies</p> <ul style="list-style-type: none"> Describe the I2C/IPMI bus architecture
	<p>1.10 Describe the common components of data centers</p> <ul style="list-style-type: none"> Describe the fundamentals of power protection Describe the cabling management Describe the cooling management technologies/concepts Describe the physical space layout requirement Describe the physical access (security) to the data center, rack and server
2. Recognize and describe HP and industry standard server products and solutions	<p>2.1 Identify and describe Server Products</p> <ul style="list-style-type: none"> Describe the difference between tower, rack and blade products Describe the features of the current ProLiant ML, DL and SL offerings
	<p>2.2 Describe health and fault management tools and technologies</p> <ul style="list-style-type: none"> Explain how ASR and ASR-2 work Identify the server health components
	<p>2.3 Identify and describe Remote Management offerings</p> <ul style="list-style-type: none"> Describe the features and differences of Lights-Out solutions Describe the features of Onboard Administrator remote management
	<p>2.4 Describe the features and options of various rack series</p> <ul style="list-style-type: none"> Identify and describe rack thermal management components Identify and describe rack accessories
	<p>2.5 Identify and describe Power protection and power management</p> <ul style="list-style-type: none"> Identify and describe Uninterruptible Power Supplies Identify and describe power distribution units

	<ul style="list-style-type: none"> Identify and describe Power protection options Identify and describe power management Software Identify and describe the UPS sizing tool including Power Calculator
	<p>2.6 Identify and describe network options</p> <ul style="list-style-type: none"> Identify and describe Network cards Identify and describe blade server networking Interconnect modules Identify and describe BladeSystem Virtual Connect solutions Compare and contrast pass-thru modules with switches with Virtual Connect Identify and describe Fibre Channel Adapters Identify and describe technologies of the HP multifunction NICs
	<p>2.7 Identify and describe storage options</p> <ul style="list-style-type: none"> Identify and describe the disk storage solutions (DAS, SAN, NAS) Identify and describe storage adapters (Smart Arrays - Parallel-SCSI, SAS, SATA) Identify and describe hard disk drive offerings Identify and describe tape storage (standalone, autoloader or libraries) Describe the disk technologies - S.M.A.R.T., SSD Describe how to create Volumes and LUNs
	<p>2.8 Identify and describe standard management solutions for Windows/Linux on x86 and/or x64</p> <ul style="list-style-type: none"> Identify and describe Support Pack and its deployment options Identify and describe HP management agents Identify potential issues from the system management homepage Describe the various management standards, their purpose and limitations
	<p>2.9 Identify and describe HP ProLiant Essentials packages (foundation & value packs) and when to use them</p> <ul style="list-style-type: none"> Describe the functionality ProLiant Essentials foundation and value packs including HP Insight Control, SmartStart, Systems Insight Manager, iLO Advanced or Select Pack, Virtual Machine Management Pack, Server Migration Pack, Insight Power Manager, Rapid Deployment Pack, etc.
	<p>2.10 Identify and describe the use and benefits of vendor management utilities such as HP SIM management</p> <ul style="list-style-type: none"> Describe the fundamental management concepts of HP Systems Insight Manager Describe the concept of event classification and the purpose of event levels (minor, major, critical, informational) Describe technologies used with HP Systems Insight Manager Describe the version control solutions (VCRM, VCA) Describe the discovery and identification of processes on managed systems Describe the system requirements and installation options for HP SIM Describe the installation and initial configuration of the management server Navigate and use the HP SIM home page
	<p>2.11 Identify and describe HP Standard Warranties and other service offerings</p> <ul style="list-style-type: none"> List and use the different methods to verify warranty entitlement Describe the difference between warranty, Care Packs, and managed services Identify and describe Customer Self Repair (CSR)
3. Plan and design server and storage solutions for SMB customers	<p>3.1 Design, size and validate the solution</p> <ul style="list-style-type: none"> Use appropriate tools to size and validate a given situation Select an appropriate operating system Select the hardware Identify design considerations to eliminate SPOF Design and implement a backup strategy
4. Install, configure, and upgrade server and storage	<p>4.1 Verify the physical installation</p> <ul style="list-style-type: none"> Install the rack and its accessories Follow and use the pre-installation guidelines Assemble system hardware

solutions (including both rack-mount and blade systems) for SMB customers	<ul style="list-style-type: none"> • Verify successful POST completion to confirm components are installed correctly • Install and assemble external storage • Configure server hardware and related options <p>4.2 Install server supported operating system</p> <ul style="list-style-type: none"> • Install OS with and without SmartStart • Pre-configure and install/update ProLiant Support Pack using HP Smart Update Manager • Configure Network Adapter Teaming • Configure OS services <p>4.3 Install and configure management software</p> <ul style="list-style-type: none"> • Install ProLiant Support Pack for supported operating system • Install and configure System Management Homepage (SMH) • Install and configure Version Control Agent & Repository Manager • Install and configure UPS management software • Install and configure HP Insight Management Agents <p>4.4 Validate, test and document the solution</p> <ul style="list-style-type: none"> • Use management agents • Ensure the proper working of hardware components • Use HP applications to verify and test the subsystems (diagnostics, ADU, IML) • Ensure the proper working of software components (Event viewer, syslog) • Test all fault tolerant option features • Use Insight Diagnostics Online Edition to document the solution
5. Performance-tune and optimize server and storage solutions for SMB customers	<p>5.1 Determine whether performance is optimal</p> <ul style="list-style-type: none"> • Use the appropriate HP and 3rd party performance monitoring tools • Use standard Operating System performance monitoring tools <p>5.2 Identify and resolve bottlenecks and tune the system</p> <ul style="list-style-type: none"> • Identify network bottlenecks and tune network subsystem performance • Identify and resolve processor(s) bottlenecks • Identify and resolve system bus bottlenecks • Identify and resolve storage bottlenecks and tune storage performance • Identify and resolve memory bottlenecks • Identify and resolve OS configuration issues • Identify and resolve application bottlenecks <p>5.3 Check for known performance issues</p> <ul style="list-style-type: none"> • Check for known software (drivers, applications, OS, agents) performance issues • Check for known hardware performance issues (CPU, network, storage) • Check for known environmental performance issues (temperature, power, moisture)
6. Troubleshoot and perform repair/replacement procedures for server and storage solutions for SMB customers	<p>6.1 Troubleshoot common server and storage issues using the HP 6-step troubleshooting methodology</p> <ul style="list-style-type: none"> • Collect Data • Evaluate data in order to determine potential subsystems causing the issue • Develop an optimized action plan • Execute the plan • Test if problem is solved • Implement preventive measures
7. Manage Servers and Storage systems using HP Infrastructure Management	<p>7.1 Manage Servers and storage using HP SIM</p> <ul style="list-style-type: none"> • Install and configure HP SIM • Set up the HP SIM home page • Use the discovery and identification processes: • Apply the fundamental management concepts of HP Systems Insight Manager • Apply the security concepts for HP Systems Insight Manager • Integrate HP SIM plug-ins as appropriate from ProLiant Essentials Value Pack • Configure and use Service Essentials Remote Support Pack • Install and use Version Control Repository Manager (VCRM)

	<ul style="list-style-type: none"> • Configure Remote Management technologies • Identify differences of HP SIM and agent functionality between different Operating Systems
	7.2 Manage servers and storage with HP ProLiant Essentials <ul style="list-style-type: none"> • Use HP ProLiant Essentials Foundation Pack - SmartStart • Use HP ProLiant Essentials Foundation Pack – Management
	7.3 Manage using HP Server Services <ul style="list-style-type: none"> • Use Service Essentials Remote Support Pack
8. Administer and operate server and storage solutions for SMB customers	8.1 Perform system upgrades <ul style="list-style-type: none"> • Perform hardware upgrades • Perform disk subsystem upgrade (for performance/availability/expandability) • Perform software updates
	8.2 Design and implement the appropriate fault management solution <ul style="list-style-type: none"> • Design and implement a business continuity plan • Verify backups, restores, and/or failovers