

HP ATA – Servers and Storage certification



Introduction

In today's business environment, the lack of skills to execute IT technologies and cloud solutions is a roadblock for many companies trying to stay competitive. The HP Accredited Technical Associate (ATA) certification addresses those issues by providing the industry's first architect-level, open-standards, cloud-focused curriculum and certification designed for the academic environment. A robust curriculum with practice exams and real-world scenarios, infused with the relevant business context, enables students to implement an IT solution from start to finish in small and medium size environments.

Through HP Institute, the HP ATA certification covers these essential IT areas:

- HP ATA – Connected Devices*
- HP ATA – Networks*
- HP ATA – Servers and Storage*
- HP ATA – Cloud

HP ATA certification helps students gain higher job and earning potential through industry-recognized certification and high-quality education that provides end-to-end IT skills with HP and industry-standard technologies. The HP ATA – Servers and Storage certification provides the knowledge and experience required to design an application hosting and data storage solution that meets customer requirements. Through this course and certification, you will be able to explain and recognize industry-standard server technologies and their implications for customer needs. You will learn how to plan, design, install, configure, and upgrade modular and rack-mount servers. You will also learn how to manage, administer, and operate server and storage solutions for SMB customers.

See “Exam and course details” for more information.

* Prerequisite to attain HP ATA – Cloud certification

Start your IT career

Achieving an HP ATA – Servers and Storage certification signifies job-readiness in key IT roles:

- Server architect
- Systems administrator
- Systems engineer
- Technical support engineer

For HP ATA certification, training is delivered through Certiport authorized centers and approved learning institutions. Certiport is the largest provider of academic certification programs in the world and is working with HP to deliver the HP Institute program worldwide. To find and a participating school near you or to register for an exam, please visit certiport.com/hpstudent.

Exam and course details

Course name: Designing and Deploying Server and Storage Solutions (#00429060)

Exam HP4-A03

Section	Objective
1. Explain and recognize industry-standard server technologies and their implications for customer needs	<p>1.1 Describe processor technologies and their implications for customer needs</p> <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 for server identification• Identify and describe multi-processing architecture <p>1.2 Describe memory technologies and their implications for customer needs</p> <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, and 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 <p>1.3 Describe common server system architectures and their implications for customer needs</p> <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 <p>1.4 Describe common storage technologies and their implications for customer needs</p> <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 SCSI-based storage (both parallel and serial)• 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 for 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, including file/print servers, Web/FTP servers (static, dynamic), proxy servers, DB servers, network services, terminal servers, messaging servers, virtual servers, and authentication services</p>

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	<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 for 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• 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

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	<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 their limitations <p>2.9 Identify and describe HP ProLiant Essentials packages (Foundation and Value Packs) and when to use them</p> <ul style="list-style-type: none">• Describe the functionality of 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 Pack, 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 solutions (including both rack-mount and blade systems) for SMB customers	<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• 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 and 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

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5. Performance-tune and optimize server and storage solutions for SMB customers	5.1 Determine whether performance is optimal <ul style="list-style-type: none">• Use the appropriate HP and third-party performance monitoring tools• Use standard operating system performance monitoring tools 5.2 Identify and resolve bottlenecks and tune the system <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 5.3 Check for known performance issues <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	6.1 Troubleshoot common server and storage issues using the HP 6-step troubleshooting methodology <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	7.1 Manage servers and storage using HP Systems Insight Manager <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 SIM• Apply the security concepts for HP SIM• 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)• 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

Resources

Student Overview

certiport.com/hpjobready

HP Institute

hp.com/go/Institute

HP ExpertOne

hp.com/ExpertOne

Certiport

certiport.com/hp

Exam details

To maximize results, it is recommended that students successfully complete the training and hands-on labs prior to the exam. The following are details about this exam:

- Item types: Multiple choice
- Exam time: 60 minutes
- No online or hard copy reference material allowed

An email notification of test results will be sent 2–5 days after taking the exam.

Continuing career development

To continue your career development, HP ExpertOne provides everything you need to stay relevant and able to support the evolving needs of business and IT. ExpertOne provides training and certification for architecting, implementing, and supporting complete, end-to-end IT solutions with skill levels ranging from professional to master.

HP Institute and Certiport partnership

HP is partnering with Certiport, Inc. to co-develop and distribute the HP Institute program. Certiport is the world leader in performance-based certification program management solutions with more than 12,000 academic institutions worldwide. HP and Certiport have developed a complete set of academic solution components. The academic components include HP Official Courseware textbooks, videos to enhance the practical learning, practice tests, and certification exams. All of these are designed for use by educators directly in the classroom environment.

HP ExpertOne

HP helps organizations address the widening IT expertise gap with HP ExpertOne, the industry's first end-to-end learning and expertise program. It delivers comprehensive knowledge with real-world, hands-on experience to attain the critical skills needed to architect, design, and integrate multivendor, multiservice converged infrastructure and cloud solutions. HP Institute extends the ExpertOne approach, bringing the industry's first academic architect-level certification to high school and secondary schools and traditional two- and four-year institutions. By injecting business value and end-to-end IT skills into technology education, HP Institute helps academic institutions prepare more qualified IT professionals. Graduates will have the business insight and knowledge of HP and industry-standard solutions needed to be productive from day one—the same skills employers will seek most to help their businesses implement critical new technology strategies and solutions.

For more information on the HP Institute or how you can be involved, please contact hpinstituteprogram@hp.com.

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