

### Overview

Unbelievably simple. Uniquely affordable. Unquestionably reliable.

**HP All-in-One (AiO) Storage:** Imagine having a single integrated solution that could provide shared storage for application servers (iSCSI Target), enhanced file serving for end-user clients (NAS), backup target services for network data, and data protection software to keep all of your data safe and secure; these are the key functions of HP All-in-One Storage and together, they allow businesses to lower costs, increase efficiencies, and respond to rapid data growth. HP StorageWorks All-in-One Storage Systems are radically simple, integrated, and affordable network storage solutions that enable small and mid-size companies to easily manage, grow, and protect their data without requiring them to become storage experts. These systems are designed to be deployed and managed by IT generalists with no storage expertise and deliver everything you need to lower the cost and complexity of rapidly growing data storage environments.

The easy-to-use, All-in-One Storage Manager (ASM) interface reduces the time, expense, and expertise required to keep up with rapidly growing applications like Microsoft Exchange. Busy IT Managers do not have time to learn complex storage technologies; ASM eliminates this barrier by handling all underlying storage tasks and presenting network storage in application-centric terms, giving administrators newfound levels of control. Data migration tools for Exchange 2003/2007 and SQL Server 2000/2005 include 'best practice' recommendations which allow any IT generalist to look like a storage expert. Tools for hosting 'user defined' applications enable flexible deployment in many different environments.

ASM provides easy setup of shared folders, backup target areas, and iSCSI Target storage for hosts running Windows Server, Linux, VMWare ESX, or any other standards-compliant iSCSI initiator. Administrators can quickly and easily setup or expand data areas, migrate data from capacity constrained servers, manage disk based backup storage areas, implement disk and tape backup policies, and more.

Now you can have a simple, affordable, and reliable network storage solution that provides many of the management, consolidation, and data protection features typically reserved for higher-priced and more complex storage products.

**About the AiO1200:** This high capacity all-in-one solution built on the ProLiant DL320s Storage Server provides shared storage expansion for application servers (iSCSI SAN), enhanced file serving for end-user clients (NAS), and comprehensive data protection features. The AiO1200 is an excellent solution for customers looking for increased performance and capacity from 12 internal drives and a high performance RAID controller. The AiO1200 is available in both SATA and Serial Attached SCSI (SAS) configurations.

**NOTE:** Updates to the HP All-in-One Storage Manager (ASM) are posted to support links available at <http://www.hp.com/go/AiOStorage>. Some of the management features discussed in this document may require the installation of software updates depending on the version of ASM installed on your system. Be sure to check for updates to make sure you are using the latest version of the software. Critical updates for the Windows Storage Server 2003 R2 operating system can be implemented using standard Windows Update functionality but you should disable any auto-restart options to avoid complications with iSCSI connections. For other software components you should only update components as part of an All-in-One Storage System update. Do not separately download or install individual updates for Data Protector Express as this may adversely affect the management integration of these components.

### Highlights

#### Benefits of HP StorageWorks All-in-One Storage Systems

**Breakthrough simplicity that lowers the cost and complexity of data management**

The intuitive All-in-One Storage Manager interface radically simplifies the growth, management, and protection of data by hiding complexity and enabling storage to be a turnkey resource. Designed for IT generalists with no storage expertise, these systems can be setup and actively serving files in minutes.

**Integrated and adaptive storage solutions to enable business growth**

A single storage solution that can respond to a wide variety of business needs. HP All-in-One Storage Systems offer an incredible degree of utility and flexibility by providing shared storage for multiple application servers, file serving for end-user clients, disk based backup capabilities, and data protection for both file and application data via snapshots and backup software.

**Affordable and cost effective solution for growing application environments**

Managed through a single interface, HP All-in-One Storage provides shared application storage (iSCSI Target), file serving (NAS), and data protection below the cost of separate products and without the need to change your infrastructure. **NOTE: A dedicated segment is recommended for your iSCSI traffic and can be implemented using standard Ethernet hardware you probably already have.**

**Application-centric storage management simplifies operation and lowers costs**

Easy to manage because it uses terms and functions familiar to application administrators. Includes end-to-end iSCSI management for Windows Servers plus iSCSI provisioning for other iSCSI initiators (Linux, VMWare ESX Server, etc.). Provides data migration wizards for Microsoft Exchange 2003/2007 and SQL Server 2000/2005.

**'Best Practice' toolkit makes every IT Administrator look like a storage expert**

HP All-in-One Storage Systems include tools to easily migrate and manage data using best practice settings. For example, iSCSI storage for a Microsoft Exchange Storage Group can be expertly setup and migrated in less than 10 mouse clicks, saving you time and reducing the risk to your business.

**Shared storage for growing application servers (iSCSI SAN) enables efficient use of capacity**

Sharing storage between servers is more efficient and costs less to manage over time when compared against adding additional drives to individual servers. Sharing storage means that you maximize investments in additional capacity while enabling easier growth and shorter backup windows. HP All-in-One Storage Systems utilize the Microsoft iSCSI Software Target to provide block-based access to network storage.

**Enhanced file serving for end-user clients (NAS) to improve productivity and collaboration**

Tuned for faster file serving performance (20% faster than standard Windows Server on the same hardware). Single Instance Storage (SIS) de-duplication features can improve capacity utilization by 30% or more by eliminating duplicate files within shared volumes. Full text search capabilities increase the speed of end-user search. Support for heterogeneous environments (CIFS/NFS) gives you the flexibility your changing business needs to serve multiple operating environments.

**Comprehensive and integrated data protection to ensure easy roll-back and disaster recovery**

Provides an easy mechanism to manage disk based snapshots for easy rollback, integrated data protection software for offsite and archive, hot plug disk drives (RAID), and hardware redundancy. Data can also be replicated to another system for enhanced disaster recovery. Utilize your All-in-One Storage pool as a disk based backup target for other systems in your environment and manage Data Protector Express virtual library objects direct from the All-in-One Storage Manager.

### Highlights

**Easy to deploy and manage so you can focus on your core business**

Uses standard tools and concepts familiar to server administrators to reduce learning curve and barriers to network storage. The industry standard iSCSI interface provides the benefits of shared SAN storage on a traditional TCP/IP network. HP ProLiant hardware ensures reliability, low TCO, and supportability. The All-in-One Storage Manager quickly walks administrators through all major setup and management tasks.

**Award winning warranty, support and troubleshooting tools to ensure worry-free operation**

HP All-in-One Storage Systems can send alerts for various events such as an impending disk failure reducing the potential for downtime while HP's world class support organization and partner network ensures that you can quickly recover in the case of a problem.

### Available Product Configurations

**HP StorageWorks 400t All-in-One Storage System (AiO400t)**

This 4-drive entry-level tower solution built on the ProLiant ML110 G5 Storage Server provides shared storage expansion for application servers (iSCSI Target), enhanced file serving for end-user clients (NAS), and comprehensive data protection features. The AiO400t is an affordable solution for small datacenter or branch office environments that need less than 1TB SATA or 584GB SAS total raw capacity.

- Sizing Guidelines: For Exchange environments, the AiO400 can be used for smaller Storage Groups with less than 100 mailboxes when using the Exchange ESRP implementation guidelines. Out of the box implementations should only use the AiO400 for very few users or archival Storage Groups unless using SAS HDDs. While it is certified for VMWare ESX iSCSI connectivity, the AiO400 is not recommended in VMFS environments due highly random read/write performance characteristics of VMFS.

**HP StorageWorks 400r All-in-One Storage System (AiO400r)**

This 4-drive entry-level rackable solution built on the ProLiant DL160 G5 Storage Server provides shared storage expansion for application servers (iSCSI Target), enhanced file serving for end-user clients (NAS), and comprehensive data protection features. The AiO400r is an affordable solution for small datacenter or branch office environments that need less than 2TB SATA or 1.2TB SAS total raw capacity.

- Sizing Guidelines: For Exchange environments, the AiO400 can be used for smaller Storage Groups with less than 100 mailboxes when using the Exchange ESRP implementation guidelines. Out of the box implementations should only use the AiO400 for very few users or archival Storage Groups unless using SAS HDDs. While it is certified for VMWare ESX iSCSI connectivity, the AiO400 is not recommended in VMFS environments due highly random read/write performance characteristics of VMFS.

**HP StorageWorks 600 All-in-One Storage System (AiO600)**

This mid-level tower/rack solution built on the ML350 G5 Storage Server provides shared storage expansion for application servers (iSCSI SAN), enhanced file serving for end-user clients (NAS), and comprehensive data protection features. The AiO600 is an excellent solution for customers looking for increased capacity, scalability, and hardware redundancy. The AiO600 is available in both SATA and Serial Attached SCSI (SAS) configurations.

- Sizing Guidelines: For Exchange environments, AiO600 SATA

### Highlights

configurations are appropriate for storage groups with less than 500 mailboxes while AiO600 SAS configurations support up to 1,000 mailboxes when using the Exchange ESRP implementation guidelines. Out of the box implementations for the AiO600 will support approx 25% of these numbers. The AiO600 is certified with VMWare ESX for iSCSI connectivity; due to the highly random read/write performance characteristics of VMFS we recommend SAS HDDs and the AiO1200 SAS as the best performance option for use with VMWare ESX and VMFS.

**HP StorageWorks 1200 All-in-One Storage System (AiO1200)** This high capacity and performance optimized solution built on the DL320s Storage Server provides shared storage expansion for application servers (iSCSI SAN), enhanced file serving for end-user clients (NAS), and comprehensive data protection features. The AiO1200 is an excellent solution for customers looking for increased performance and capacity from 12 internal drives and a high performance RAID controller. The AiO1200 is available in both SATA and Serial Attached SCSI (SAS) configurations.

- Sizing Guidelines: For Exchange environments, AiO1200 SATA configurations are appropriate for storage groups with less than 500 mailboxes while AiO1200 SAS configurations support up to 1,500 mailboxes when using the Exchange ESRP implementation guidelines. Out of the box implementations for the AiO1200 will support approx 25% of these numbers. The AiO1200 is certified with VMWare ESX for iSCSI connectivity; due to the highly random read/write performance characteristics of VMFS we recommend SAS HDDs for use with VMWare ESX and VMFS.

**HP StorageWorks All-in-One SB600c Storage Blade (AiO SB600c)** This half-height all-in-one storage blade solution was designed for HP c-class BladeSystem environments and combines a BL460 server blade and SB40 storage blade. It provides shared storage expansion for blade servers (iSCSI SAN), enhanced file serving for end-user clients (NAS), and comprehensive data protection features. The AiO SB600c is an excellent solution for customers looking at c-3000 or c-7000 BladeSystem deployments. The AiO SB600c is available in a SAS configuration.

- Sizing Guidelines: For Exchange environments, AiO SB600c SAS configurations are appropriate for storage groups with less than 500 mailboxes. The AiO SB600c is certified with VMWare ESX for iSCSI connectivity.

Software Feature Specifications for the HP All-in-One Storage Family

All-in-One Storage Management Interface

- This single easy to use, integrated storage management tool can manage many aspects of the storage environment.
  - Rapid startup tools for fast and easy installation and out-of-the box configuration
  - Provides end-to-end management and provisioning of iSCSI storage for 32-bit and 64-bit Windows Server 2003 hosts from the iSCSI Target all the way through to the host
  - Provides management and provisioning of iSCSI storage for standards-compliant non-Windows iSCSI initiators such as VMWare, Linux, etc..
  - Application data hosting and migration wizard using HP and Microsoft 'Best Practice' storage configurations for Microsoft

### Highlights

- Exchange 2003/2007 Storage Groups and Microsoft SQL Server 2000/2005 databases.
  - Application data hosting and iSCSI Setup wizard for other 'User Defined' Application (Oracle, mySQL, etc...)
  - File Share creation wizard with storage allocation and directory quota management.
  - Data protection policy assignment (snapshots and backup) integrated into application migration and share creation wizards for data hosted on the system.
  - Data Protector Express virtual library device provisioning and space management as well as support for Data Protector Express D2D2Any add-on option.
  - Application-level capacity provisioning and online growth for shares, SQL Server and Exchange. SQL Server support includes data file and log directory provisioning and Exchange support includes Mailstore, Publicstore and log directory provisioning.
  - Quota monitoring and alerting per share or application.
  - Remote management via Microsoft Internet Explorer or Terminal Services.
  - Support for setup and management of both internal storage as well as supported direct attached MSA storage enclosures
  - Supports management of tiered storage environments where both SAS, parallel SCSI, or SATA hard drives are attached to the All-in-One Storage System either internally or on externally attached MSA storage enclosures.
- Shared Application Storage (Microsoft iSCSI Software Target)**
- Compliant with iSCSI industry standards and compatible with industry standard iSCSI initiators. Interoperability has been verified for Windows 2000, Windows Server 2003, VMWare ESX Server 3, SUSE Linux Enterprise Server 10, RedHat Enterprise Linux 5, and Qlogic 4050c. For additional information please visit [www.microsoft.com/storage](http://www.microsoft.com/storage).
  - MMC based console to setup iSCSI Target storage. This console can be used to setup advanced storage options. Basic iSCSI Target setup and management can be performed directly from the All-in-One Storage Manager.
  - Support for advanced features such as TCP/IP offload with multi-function network adapters (requires Microsoft Scaleable Network Pack (SNP) and multi-pathing (MPIO). **NOTE: HP iSCSI Acceleration Pack is not supported on the iSCSI Target.**
  - The Microsoft iSCSI Target can be used as target storage behind a Microsoft application cluster. For more information on this implementation read the whitepaper on this topic found at <http://www.hp.com/go/AiOStorage>.
- Shared Application Storage (Microsoft iSCSI Software Target) File/print serving (NAS Operating System - Windows Storage Server 2003 R2 Standard Edition)**
- Native CIFS file serving support - Windows based file serving optimized for Windows clients
  - Microsoft Services for Network File System (NFS) to enable heterogeneous file serving to non-Windows clients.
  - HP Enhanced, File Server Management Console
  - De-duplication via Single Instance Storage (SIS) to eliminate duplicate files and maximize available capacity; SIS can improve capacity utilization by 30% or more
  - Full-text indexing to maximize productivity and allow for fast data

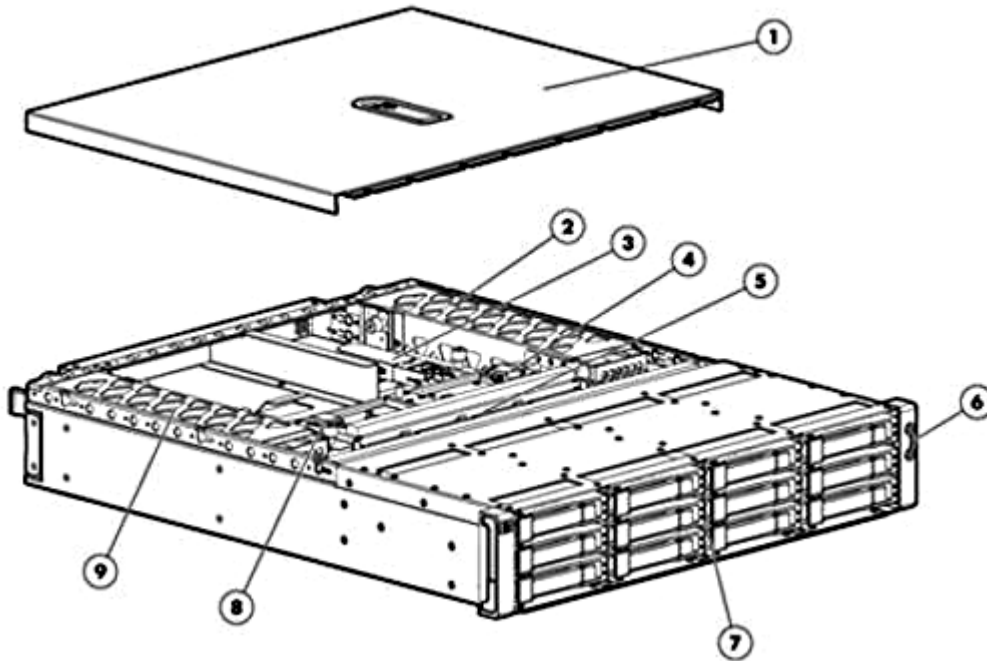
### Highlights

#### Integrated Data Protection

- retrieval.
- File Server Resource Manager for quotas, file screening and storage reporting
- Print Server management console with unlimited printer support
- Unlimited Client Access License (CAL) included
- Print Server support
  - Easy to use print management console
  - Unlimited printer support
- RAID hard drive configurations (hot swappable drives)
- Disk-based snapshots for easy roll-back
  - Scheduled or ad-hoc by application
  - Managed through HP All-in-One Storage Manager
  - Exchange and SQL Server aware snapshots ensure consistent data sets for the applications.
  - 512 snapshots per independent iSCSI/Application volume. 64 snapshots for file share volumes. (NOTE: If iSCSI LUNs and file shares are on a common volume the iSCSI snapshot limit is 448.)
- A fully integrated copy of HP StorageWorks Data Protector Express software (v3.1SP4) provides enhanced backup and recovery operations. (NOTE: This is the backup server LTU component of Data Protector Express and does not include any add-on licenses for features such as Bare Metal Recovery or Disk-to-Disk-to-Any functionality. If using the All-in-One Storage System as a backup server for a Data Protector Express backup domain all members of the domain should be running the same version of Data Protector Express)
  - Automatic discovery of tape devices
  - Software based Virtual Tape functionality
  - Disk-to-disk-to-any data protection
- Microsoft Distributed File System Replication (DFS-R) to enable replication of files to an alternate HP All-in-One Storage System, including
  - DFS Management Console
  - Configuration and Diagnostic Tools
- Support for HP StorageWorks Storage Mirroring v4.5 (AiO Edition) to enable replication and failover of both files and iSCSI LUNs.
  - A 60-day trial version of HP StorageWorks Storage Mirroring software is included on most systems or can be downloaded from <http://h18000.www1.hp.com/products/storage/software/sm/index.html>
- Microsoft Windows Storage Server 2003 Release 2, Standard Edition

#### Operating System

### Highlights



HP All-in-One 1200 Storage System

- |   |                                   |
|---|-----------------------------------|
| 1. Quick removal access panel                   | 6. Front LED Indicators           |
| 2. Power Supply #1                              | 7. 12 LFF SAS or SATA Hard Drives |
| 3. HP Smart Array P400 Controller               | 8. USB                            |
| 4. USB port                                     | 9. Power Supply #2                |
| 5. Hot Plug Dual Rotor Fans with N+1 Redundancy |                                   |

### AiO1200 Hardware Specifications

<b>Processor</b>	<ul style="list-style-type: none"> <li>• Dual Core Intel Xeon 2.67 GHz/1066 FSB with 4MB (2 x 2MB) L2 Cache</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>• 2GB of PC2-5300 (667MHz) Unbuffered ECC DDR2 SDRAM (2 x 1GB). Interleaving optional (Enabled when DIMMs populated in pairs). AiO1200 has 4 DIMM sockets.</li> </ul>
<b>Operating System</b>	<ul style="list-style-type: none"> <li>• Windows Storage Server 2003, Release 2 Standard Edition</li> </ul>
<b>Network Controller</b>	<ul style="list-style-type: none"> <li>• Embedded NC324i PCIe Dual Port Gigabit Server Adapter</li> </ul>
<b>Storage Controller</b>	<ul style="list-style-type: none"> <li>• HP Smart Array P400/512MB Controller (RAID 0/1/5/6 (with Advanced Data Guarding)) (x1 through x8) with battery-backed write cache (BBWC).</li> </ul>
<b>Internal Storage (varies by model)</b>	<ul style="list-style-type: none"> <li>• 3TB SATA Model: 12 x 250GB front load, hot plug, 7200 RPM SATA HDDs</li> <li>• 6TB SATA Model: 12 x 500GB front load, hot plug, 7200 RPM SATA HDDs</li> <li>• 9TB SATA Model: 12 x 750GB front load, hot plug, 7200 RPM SATA HDDs</li> <li>• 1.7TB SAS Model: 12 x 146GB front load, hot plug, 15,000 RPM Serial Attached SCSI (SAS) HDDs</li> <li>• 3.6TB SAS Model: 12 x 300GB front load, hot plug, 15,000 RPM Serial Attached SCSI (SAS) HDDs</li> </ul>

### Highlights

Optical Drive	<ul style="list-style-type: none"><li>● Rear Slimline DVD-ROM drive</li></ul>
Expansion Slots	<ul style="list-style-type: none"><li>● (1) x8 full height PCI-Express (x8 connectors) (occupied by P400 controller)</li><li>● (1) x8 half-height PCI-Express x1</li></ul>
Power Supply	<ul style="list-style-type: none"><li>● Auto-sensing 575 Watt/12 Volt/1.2A FAN redundant Power Supply, CE Mark Compliant</li></ul>
Cooling Fans	<ul style="list-style-type: none"><li>● 4 dual rotor fans ship standard, hot pluggable</li></ul>
Remote Management	<ul style="list-style-type: none"><li>● Remote system management User Interface (UI), Remote Desktop or Telnet</li><li>● Integrated Lights Out 2 (iLO2) with Advanced License Pack included</li></ul>
Form Factor	<ul style="list-style-type: none"><li>● 2 U rackmount</li><li>● Length - 24.5"</li><li>● Rails - MSA universal rail kit</li></ul>
Warranty	<ul style="list-style-type: none"><li>● The AiO1200 has a standard 3-3-3 warranty (3 years parts exchange, 3 year labor, and 3 year on-site, next business day response) which can be upgraded to same day support through HP Care Packs.</li></ul>
SIM Support	<ul style="list-style-type: none"><li>● The AiO1200 supports Insight Manager through SNMP. For more information on HP Insight Manager please visit: <a href="http://h18013.www1.hp.com/products/servers/management/hpsim/index.html">http://h18013.www1.hp.com/products/servers/management/hpsim/index.html</a></li></ul>

### Optional Software to Enhance HP All-in-One Storage Systems

- **HP StorageWorks Storage Mirroring (AiO Edition)** - HP StorageWorks Storage Mirroring software offers a host-based application that performs remote copy over an IP LAN/WAN. Key features include asynchronous replication that can be scheduled to a fine granular level, Logical Unit Number (LUN), file or byte level. Other features include multiple replication configuration options including peer-to-peer and many-to-one. In addition, Storage Mirroring is a very cost effective disaster recovery alternative from one host to another within a LAN, storage center, or between direct attached storage in metro offices and regional centers. Additional configurations allow replication from small office environments to ensure business continuity without an outside IT staff.

For more information: <http://h18000.www1.hp.com/products/storage/software/sm/index.html>

- **HP Data Protector Express optional extensions** - Data Protector Express delivers class leading features and reliability without compromising its ease of use. Features such as open file backup, D2D2Any backup and recovery and bare metal disaster recovery minimize the impact of backup and recovery operations. The D2D2Any feature extends the scale and capability of the D2D backup (Virtual Library) to allow backups to be moved or copied from disk to other media such as tape for longer term retention. Agents are available for the protection of networked file servers, application servers, HP Data Protection Storage Server and Windows desktops. High performance is delivered through the Data Protector Express three-tier architecture - unique in this class of product - and self-tuning parallel backup streams that allows multiple jobs to run concurrently.

The HP All-in-One Storage System includes the backup server LTU which enables the backup and recovery of file and iSCSI data on the AiO and the setup and management of virtual libraries; you can consolidate the rest of your backup infrastructure and add advanced functionality by including any of the optional extensions such as D2D2Any, bare metal recovery, or network agents for backup of data stored locally on other servers.

For more information on Data Protector Express visit <http://www.hp.com/go/dataprotectorexpress>. Click on the QuickSpec link for information on SKU's, options, and functional extensions.

### Highlights

- **HP StorageWorks File Migration Agent** - HP FMA is an automated solution designed to help simplify Windows-based file, web, and application server administration in small business to enterprise environments. This is accomplished through policy-based file migration and archive to popular storage targets, including HP StorageWorks Reference Information Storage System (RISS), HP StorageWorks File System Extender, and NAS, via Common Internet File System (CIFS).

The following Windows Storage Server features or add-ons are currently NOT supported by HP File Archiving software:

**NOTE:** Single Instance Storage (SIS) - (NOT SUPPORTED)

**NOTE:** DFS-Replication (DFS-R) - (NOT SUPPORTED)

**NOTE:** File Server Resource Manager (FSRM) - Content Filter, & File Screening - (NOT SUPPORTED)

For more information:

<http://h18006.www1.hp.com/products/storage/software/fma/>

- **HP Systems Insight Manager** - HP SIM 5.x is the first unified server and storage management platform. Now, from a single management console, administrators can manage their complete HP server and storage environment with a feature rich, extensible and secure management tool set.

HP SIM also serves as a central access point for ProLiant Essentials, Integrity Essentials, and Storage Essentials software options that deliver targeted functionality for these platforms. For more information: <http://h18013.www1.hp.com/products/servers/management/hpsim/index.html>

- **Insight Management Agents** - Allow all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers.
- **HP Storage Essentials NAS Manager** - Provides comprehensive Network Attached Storage (NAS) management capabilities for HP All-in-One Storage Systems. Visualize your distributed HP All-in-One Storage Systems and centrally manage their capacity, performance, events, and dependencies to ensure availability and performance and unify SAN and NAS management. For more information on the complete line of HP Storage Essential products go to: <http://www.hp.com/go/storageessentials>

### *Service and Support, HP Care Pack, and Warranty Information*

HP Care Pack Services offer upgraded service levels to extend and expand your standard product warranty with easy to buy, easy to use support packages that help you make the most of your hardware and software investments. They let you choose the support levels that meet your business requirements. They help you contain total cost of ownership.

HP Care Pack warranty extensions can be purchased along with HP products to cost-effectively upgrade or extend your warranty. For most HP products, including AiO1200, post-warranty HP Care Pack Services are available when your original warranty has expired.

#### **Why purchase an HP Care Pack service?**

Your standard warranty protects against product defects during normal working hours. HP Care Pack Services help you extend this protection to more coverage hours and more days per week. This can increase uptime which can improve your productivity and profitability. These convenient service packages:

- Protect your investment in HP products
- Provide consistent, predictable levels of support across your entire department or business
- Ease budget planning with fixed-cost support that includes parts and labor
- Give you direct access to proven technical and problem-solving expertise
- Offer a choice of response-time and repair-time commitments
- Deliver prompt, measurable results
- Are available whenever and wherever you do business
- HP Care Pack availability may vary by country and product.

The breadth, depth, and quality of HP hardware and software support services can help you improve the performance of your IT support processes and resolve the complex software and hardware problems that tax user productivity. HP Care Pack services help you increase IT environment stability, efficiency, and agility from the desktop to the data center, and improve the productivity of your employees.

HP offers an optional migration service to assist the customer in moving to the newest product release. This may be in the form of a defined kit and service, or may alternatively be performed on a time & material basis.

HP Services allows the customer to leverage HP's experience in selecting and configuring the most widely used security features, and provides an environment that is immediately more available due to increased change control and significantly improved data security.

For more information on these and other service options, please contact any of our worldwide sales offices or visit our web site at: <http://www.hp.com/hps/support>

#### **Warranty and Services Included with the Product**

HP basic Software warranty provides that the Software media will be free of physical defects for a period of ninety (90) days from delivery. In addition to this basic Software warranty HP also includes, as part of the product, a 1 year, Software Support Carepack that provides phone in support for 9hrs/day, 5 days/week for all the bundled software including the WSS2003 R2 operating system including the iSCSI functionality, the Data Protector Express software, and the enhanced All-in-One Storage Manager (ASM) GUI. This AiO1200 product support can be uplifted to 24x7 for up to 5 years.

The HP AiO1200 comes with a 3-3-3 hardware warranty (3 years parts exchange, 3 years labor, and 3 years on-site, next business day response) for product hardware.

### Service and Support, HP Care Pack, and Warranty Information

**Available HP Care Pack Services** Extend your product warranty with a choice of cost-saving support packages.

HP Care Pack Services are sold by HP and HP authorized enterprise and commercial resellers. Services for customers purchasing via direct and enterprise resellers are quoted using HP order configuration tools.

- HP Care Pack is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- HP Care Pack is not available for less than the product's warranty duration.
- HP Care Pack is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the Warranty Start Date (delivery date to end user customer). Proof of purchase may be required.
- HP Care Pack services are prepaid.

For additional information on Product Services and HP Care Pack, as well as orderable part numbers, please refer to the URL: <http://www.hp.com/hps/carepack/>.

If you have specific questions about availability or how to obtain services contact your local HP representative. Contact information for your local area can be found at: <http://www.hp.com/services>.

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### Installation Services

The Installation service deployment activities follow the AiO Quick Start Poster and include:

- Unpacking the product, performing initial inspection, rack mounting if required, and setting up product hardware and power connectivity and connecting customer provided cables
- Working with the customer to determine if access to the AiO will be DHCP or networking
- Configuring the AiO by running the Rapid Startup Wizard which sets such things as date, time, user name and password, setting up integrated Lights Out (iLO) and simple network management protocol (SNMP).
- The AiO "Create a Shared Folder" Wizard is run to configure the AiO to share files, and access is confirmed.

Finally, a product orientation of less than 10 minutes provides a brief overview of how the product was set up, as well as how to find information within the product documentation.

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### Service and Support, HP Care Pack, and Warranty Information

#### Support Plus 24 CarePack

HP Support Plus 24 provides all the benefits of the regular Support Plus Care Pack, but HP Services engineers are available to work with your IT team to deliver onsite hardware support and over-the-phone software support around-the-clock 365 days per year.  
Three years of HP Support Plus 24 x 7

- Improve coverage hours from 9x5 to 24x7
- Improve HW response time from warranty of next business day to 4hrs same day
- Extend coverage from 1 year to 3 years
- Includes both AiO hardware and software
- Improve the productivity of system managers and operators
- Improve system performance and reduce downtime due to software defects
- Expedite problem resolution through expert-level technical resources
- Enjoy consistent service coverage across geographically dispersed sites
- Access to patches for HP and selected third-party software and firmware

In short you enjoy all the benefits of HP Support Plus at any time or on any day you may need them. Choose Support Plus 24 when you not only need all of the benefits of Support Plus, but also require responsive hardware and software services available anytime.

#### Support Plus CarePack

HP Support Plus helps you increase the performance and availability of your IT infrastructure with comprehensive, consistent hardware and software services. HP Services engineers deliver onsite hardware support and over-the-phone software support 13 hours per day, 5 days per week.  
Three years of HP Support Plus 13x5

- Extend basic coverage from 1 year to 3 years
- Improve HW response time from warranty of next business day to 4hrs same day
- Improve coverage hours from 9x5 to 13x5 (due to improved response time)
- Includes both AiO hardware and software
- Improve the productivity of system managers and operators
- Improve system performance and reduce downtime due to software defects
- Expedite problem resolution through expert-level technical resources
- Enjoy consistent service coverage across geographically dispersed sites
- Access to patches for HP and selected third-party software and firmware

Our Service coverage encompasses the HP AiO 400/600/1200 products, selected multi-vendor hardware and provides trouble-shooting software problems which in turn range from the Windows Storage Server 2003 operating system up to the available utilities. And Support Plus provides recovery and re-configuration assistance of the base HP AiO400/600/1200 using the Quick Recovery disk and your saved configuration file (application recovery not included).

Choose Support Plus when you need to:

- Improve uptime with responsive hardware and software services.
- Enjoy consistent service coverage across geographically dispersed sites.
- Update HP and selected third-party software with tested and certified patches.

### Service and Support, HP Care Pack, and Warranty Information

#### eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

#### Support Portal

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit <http://www.hp.com/support>

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#### Education Services

HP offers a variety of training methods to fit your needs including traditional instructor-led courses at one of our 120 training centers worldwide, onsite training customized to your needs, in your facility, or even Remotely Assisted Instruction Learning that combines the best of traditional classroom training (including its live instructor and labs) with the best of online training (no traveling required). And if you like learning on your own schedule, at your own pace, make use of e-learning opportunities on the award-winning HP IT Resource Center, a "learning community" with extensive on-demand resources that can be accessed 24x7. For more information on these services, contact your HP sales representative or visit: <http://www.hp.com/learn> and click on "HP StorageWorks".

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#### Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, please contact your HP sales representative or visit: <http://www.hp.com/go/hpfinancialservices>

### Product Configuration Wizard

In the following steps you will be guided through a series of steps to help you configure the best solution for your environment. You will also be supplied with information about complementary products that can be ordered at the same time. It is important to note that HP StorageWorks All-in-One Storage Systems include all of the software features and benefits listed above as standard features; this means that there are no expensive upgrades or options required to achieve this integrated storage functionality and data management.

**NOTE:** The steps outlined below are intended only as a guide for the options available. All options chosen are not be factory integrated or configured and ship as separate components.

**Step 1 - Order the desired HP All-in-One Storage System based on capacity, performance, scalability, and redundancy requirements.**

#### AiO1200 Configurations

HP StorageWorks AiO1200 Common Specifications	Processor	Dual-Core Intel Xeon Processor 3070 (2.67 GHz, 65 Watts, 1066 FSB) with 4MB (2 x 2MB) Level 2 Cache
	Memory	2 GB of memory standard, expandable to 4 GB
	Operating System	Windows Storage Server 2003 Release 2, Standard Edition
	Storage Controller	HP Smart Array P400/512MB Controller with battery-backed write cache (BBWC)
	Optical Drive	Rear Slimline DVD-ROM drive
	Network Controller	Embedded NC324i PCIe Dual Port Gigabit Server Adapter
	Form Factor	2U Rack
	Power Supply	Auto-sensing 575 Watt/12 Volt/1.2A FAN redundant Power Supply, CE Mark Compliant
	Cooling Fans	4 dual rotor fans ship standard, hot pluggable
	Remote Management	Remote management User Interface (UI), Remote Desktop, or Telnet. Integrated Lights Out 2 (iLO2)
	Protocol Support	SMB/CIFS, NFS, NCP, AppleTalk, HTTP, FTP
	iSCSI Initiator Support	Compliant with iSCSI industry standards and compatible with industry standard iSCSI initiators. Interoperability has been verified for Windows 2000, Windows Server 2003, VMWare ESX Server 3, SUSE Linux Enterprise Server 10, RedHat Enterprise Linux 5, and Qlogic 4050c.

HP StorageWorks AiO1200 3TB SATA Model AG655A	Internal Storage	12 x 250GB front loading, hot plug, 7200 RPM SATA HDDs
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HP StorageWorks AiO1200 6TB SATA Model AG656A	Internal Storage	12 x 500GB front loading, hot plug, 7200 RPM SATA HDDs
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### Product Configuration Wizard

HP StorageWorks AiO1200 9TB SATA Model AG657A	Internal Storage	12 x 750GB front loading, hot plug, 7200 RPM SATA HDDs
HP StorageWorks AiO1200 1.7TB SAS Model AG658A	Internal Storage	12 x 146GB front loading, hot plug, 15,000 RPM Serial Attached SCSI (SAS) HDDs
HP StorageWorks AiO1200 3.6TB SAS Model AG659A	Internal Storage	12 x 300GB front loading, hot plug, 15,000 RPM Serial Attached SCSI (SAS) HDDs

### Step 2 - Select expansion options

Additional Memory for AiO1200	<b>NOTE:</b> Every HP All-in-One 1200 Storage System comes standard with 2 GB of memory and is expandable to OS limit of 4 GB	
	2 GB Unbuffered PC2-5300 ECC DIMM (1 x 2 GB)	432806-B21
	1 GB Unbuffered PC2-5300 ECC DIMM (1 x 1 GB)	432804-B21
	512 MB Unbuffered PC2-5300 ECC DIMM (1 x 512 MB)	432803-B21

The AiO1200 has one half-length, low-profile PCI Express x1 slot (x8 connector) available for additional network ports or external backup connection.

**NOTE:** Choose only one expansion card (if any)

**NOTE:** Adding external storage to the AiO 1200 requires replacing the factory-integrated Smart Array P400/512MB controller in the full-length PCIe slot with a Smart Array P800/512MB controller (since neither fits in the open low-profile x1 PCIe slot). A Smart Array P800 controller can also support external tape backup connect (except for libraries and autoloaders)

**NOTE:** The Smart Array P800/512MB controller is fully supported by the QuickRestore DVD included with all models.

SCSI Host Bus Adapters for backup	HP SC11Xe Host Bus Adapter	412911-B21
	HP U320e SCSI Host Bus Adapter	AH627A
SAS Host Bus Adapter for backup	HP SC44Ge Host Bus Adapter	416096-B21
	<b>NOTE:</b> For external tape support only	

Networking Communications	<b>NOTE:</b> Multifunction Server Adapters require installation of the Microsoft Windows Server 2003 Scalable Networking Pack (a free download from Microsoft) to enable TCP Chimney offload (TOE), Receive-side Scaling (RSS), and Network Direct Memory Access (NetDMA) features. The iSCSI Acceleration Pack component Multifunction network adapters are not supported on the iSCSI Target.	
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21

### Product Configuration Wizard

**NOTE:** Adding external storage to the AiO1200 requires replacing the Smart Array P400 controller factory-integrated in the full-length PCI-e slot with a Smart Array P800/512MB controller which can then be used for both internal disks and external storage.

**SAS Controller for External Drive Support** HP Smart Array P800/512 BBWC Controller 381513-B21  
**NOTE:** Supports external drive attach.

**NOTE:** Please see the following link for additional information on HP array controllers:  
<http://h18006.www1.hp.com/products/servers/proliantstorage/arraycontrollers/index.html>

### Step 3 - Add optional software

#### Data Protector Express extensions

**NOTE:** HP All-in-One Storage Systems ship with a the HP StorageWorks Data Protector Express Backup server LTU. No functional extensions are required to backup file or iSCSI block data but the following extensions can be added for advanced functionality. (**NOTE:** This is the backup server LTU component of Data Protector Express and does not include any add-on licenses for features such as Bare Metal Recovery or Disk-to-Disk-to-Any functionality)

Additional extensions are available if you are enabling network backup from clients or servers to the AiO as a backup target. For more information on HP Data Protector Express please visit <http://www.hp.com/go/dataprotectorexpress>.

<b>Optional extensions</b>	HP StorageWorks Data Protector Express D2D2Any LTU	BB130AA
	HP StorageWorks Data Protector Express Drive Expansion (1 incremental drive) LTU	BB133AA

Storage Mirroring replication software T5446A

HP StorageWorks Storage Mirroring software enables remote replication over an IP LAN/WAN between multiple All-in-One Storage Systems for both file (NAS) and block (iSCSI) data. Key features include asynchronous replication that can be scheduled to a fine granular level, Logical Unit Number (LUN), file or byte level. Other features include multiple replication configuration options including peer-to-peer and many-to-one. In addition, Storage Mirroring is a very cost effective disaster recovery alternative from one host to another within a LAN, storage center, or between direct attached storage in metro offices and regional centers. Additional configurations allow replication from small office environments to ensure business continuity without an outside IT staff.

### Step 4 - Add external storage disk array for additional capacity

The AiO1200 has one half-length, low-profile PCI Express x1 slot (x8 connector) available for additional network ports or external backup connection.

**NOTE:** Choose only one expansion card (if any)

**NOTE:** Adding external storage to the AiO 1200 requires replacing the factory-integrated Smart Array P400/512MB controller in the full-length PCIe slot with a Smart Array P800/512MB controller (since neither fits in the open low-profile x1 PCIe slot). A Smart Array P800 controller can also support external tape backup connect (except for libraries and autoloaders)

**NOTE:** The Smart Array P800/512MB controller is fully supported by the QuickRestore DVD included with all models.

**NOTE:** The latest version of the HP All-in-One Storage Manager (ASM) does support management of both internal storage on the All-in-One Storage System as well as direct attached MSA storage enclosures. ASM also supports management of tiered storage environments where both SCSI/SAS or SATA hard drives are attached to the All-in-One Storage System.

External storage enclosure support matrix for HP All-in-One Storage Systems

System	Enclosure	Recommended max	Host Controller or Adapter
AiO1200	MSA50	2 per controller	HP Smart Array P800/512 BBWC Controller
	MSA70		

### Product Configuration Wizard

AiO1200                      MSA60                      4 per controller                      HP Smart Array P800/512 BBWC Controller

**NOTE:** For more information on storage enclosures from HP, including product QuickSpecs, please visit [http://h18006.www1.hp.com/storage/disk\\_storage/msa\\_diskarrays/drive\\_enclosures/index.html](http://h18006.www1.hp.com/storage/disk_storage/msa_diskarrays/drive_enclosures/index.html)

HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 <b>NOTE:</b> 1U Serial Attach SCSI(SAS) disk drive storage enclosure supporting Small Form Factor(SFF) SAS or Serial ATA(SATA) drives.	364430-B21
HP StorageWorks Modular Smart Array 60	HP StorageWorks Modular Smart Array 60 <b>NOTE:</b> High capacity 2U disk drive storage enclosure supporting 12 3.5" SAS or Serial ATA (SATA) drives.	418408-B21
	HP StorageWorks MSA60 1.8TB SAS HDD Bundle (MSA60 w/12 146GB 15K SAS LFF HDD)	AG822A
	HP StorageWorks MSA60 9TB SATA HDD Bundle (MSA60 w/12 750GB 15K SATA LFF HDD)	AG823A
	HP StorageWorks MSA60 3.6TB SAS HDD Bundle (MSA60 w/12 300GB 15K SAS LFF HDD)	AG824A
	<b>NOTE:</b> The MSA60 bundles are available in the Americas, Asia Pacific (AP) and Japan only. They are not available in Europe, Middle East and Africa.	
HP StorageWorks Modular Smart Array 70	HP StorageWorks Modular Smart Array 70 <b>NOTE:</b> Rack-mountable 25 drive (2.5" SAS/SATA) enclosure with 3Gb/s SAS host connectivity and redundant power supplies.	418800-B21
	HP StorageWorks MSA70 1.8TB SAS HDD Bundle (MSA70 w/25 72GB 15K SAS SFF HDD)	AG825A
	HP StorageWorks MSA70 3.6TB SAS HDD Bundle (MSA70 w/25 146GB 10K SAS SFF HDD)	AG893A
	<b>NOTE:</b> The MSA70 bundles are available in the Americas, Asia Pacific (AP) and Japan only. They are not available in Europe, Middle East and Africa.	

## Step 5 - Add tape backup solution

The AiO1200 has one half-length, low-profile PCI Express x1 slot (x8 connector) available for additional network ports or external backup connection.

**NOTE:** Choose only one expansion card (if any)

**NOTE:** Adding external storage to the AiO 1200 requires replacing the factory-integrated Smart Array P400/512MB controller in the full-length PCIe slot with a Smart Array P800/512MB controller (since neither fits in the open low-profile x1 PCIe slot). A Smart Array P800 controller can also support external tape backup connect (except for libraries and autoloaders)

**NOTE:** The Smart Array P800/512MB controller is fully supported by the QuickRestore DVD included with all models.

**NOTE:** For more information on the complete HP StorageWorks tape backup portfolio, please visit <http://www.hp.com/go/tape>. For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit:

<http://www.hp.com/go/connect>. Please consult the EBS connectivity matrix at <http://www.hp.com/go/ebs> for detailed connectivity information.

Tape Drives	<b>HP StorageWorks Ultrium Tape Drive</b>	
	HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028B
	HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920	EH903A



### Product Configuration Wizard

HP StorageWorks 3U SCSI Rack-Mount with 1 LTO-4 Ultrium 1840 Tape Drive EH926A

**NOTE:** Please see the [HP StorageWorks Ultrium Tape Drive QuickSpecs](#) for additional options such as controllers, media, and other related items:

[http://h18006.www1.hp.com/products/quickspecs/11739\\_na/11739\\_na.html](http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html)

For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <http://www.hp.com/go/connect>.

#### Tape Autoloaders

##### HP StorageWorks 1/8 Tape Autoloader

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader AK377A

HP StorageWorks 1/8 Ultrium 920 G2 Tape Autoloader AH165A

HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader AH558A

HP StorageWorks 1/8 Ultrium 448 G2 Tape Autoloader AH164A

HP StorageWorks 1/8 Ultrium 232 G2 Tape Autoloader AH163A

HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit AH166A

**NOTE:** Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions

**NOTE:** Please reference the [Tape Autoloader QuickSpecs](#) at

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at

<http://www.hp.com/go/ebs>

#### Tape Libraries

##### HP StorageWorks MSL2024 Tape Library

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library AJ033A

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library AJ034A

HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library AK378A

HP StorageWorks MSL2024 1 Ultrium 960 Drive Library AG115A

HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Library AG326B

HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library AH559A

HP StorageWorks MSL2024 1 Ultrium 920 Drive Library AH169A

HP StorageWorks MSL2024 1 Ultrium 448 Drive Library AG116A

##### HP StorageWorks MSL4048 Tape Library

HP StorageWorks MSL4048 1 Ultrium 448 Drive Library AG320A

HP StorageWorks MSL4048 1 Ultrium 920 SAS Drive Library AH560A

HP StorageWorks MSL4048 1 Ultrium 920 Drive Library AH171A

HP StorageWorks MSL4048 1 Ultrium 960 Drive Library AG322A

HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Library AG324B

HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library AK380A

HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library AJ035A

HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library AJ036A

##### HP StorageWorks MSL6000 Tape Library

###### LTO-4 Ultrium 1840 technology

HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 SCSI Drive Library AJ029A

HP StorageWorks MSL6030 1 LTO-4 Ultrium 1840 4GB FC Library AJ030A

### Product Configuration Wizard

HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 SCSI Drive Library	AJ031A
HP StorageWorks MSL6060 2 LTO-4 Ultrium 1840 4GB FC Library	AJ032A
<b>LTO-3 Ultrium 960 technology</b>	
HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B

**NOTE:** Please reference the [MSL2024](http://www.hp.com/go/automation), [MSL4048](http://www.hp.com/go/automation), [MSL8096](http://www.hp.com/go/automation), and [MSL6000 Tape Library QuickSpecs](http://www.hp.com/go/automation) at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

### Step 6 - Add HP CarePack services

AiO1200 CarePacks	HP 1y Support Plus AiO1200 SVC	UG005E
	HP 1y Support Plus24 AiO1200 SVC	UG006E
	HP 1y 6h 24x7 CTR AiO1200 HW Supp	UG007E
	HP 3y Support Plus AiO1200 SVC	UG008E
	HP 3y Support Plus24 AiO1200 SVC	UG009E
	HP 3y 6h 24x7 CTR AiO1200 HW Supp	UG010E
	HP 1y PW Support Plus AiO1200 SVC	UG011PE
	HP 1y PW Support Plus24 AiO1200 SVC	UG012PE
	HP Installation	UF285E

### Additional Specifications

AiO1200 Additional Specifications	Dimensions (HxWxD)	3.5 x 19.2 x 23.5 in (8.8 x 48.8 x 59.7 cm)	
	Shipping Size	35.25 x 23.50 x 15.50 in (89.54 x 59.69 x 39.37 cm)	
	Weight (approximate)	Chassis without power supply and drives	30.20 lb (13.7 kg)
		Weight of each power supply, max 2 per unit	4.10 lb (1.9 kg)
		Weight of each drive, max 12 per unit	1.72 lb (.78 kg)
		Fully configured with twelve hard drives, four DIMM modules, and a PCI expansion board	59.04 lb (22.69 kg)
	Input Requirements	120/240 VAC 8.6A 47-63 Hz IEC Connector	
	Power Supply Output	12V/47A, 5V/5A	
	Acoustic Noise	L WAd (BELS)	6.75
		Bystander L pAm (dBA)	54.8
Operating (Random Seeks to Fixed Disks)			
	L WAd (BELS)	7.2	
	Bystander L pAm (dBA)	58.6	

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.