

Overview

Simple. Affordable. 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 user-friendly 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 and manage 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 2000/2005/2008 include 'best practice' recommendations which allow any IT generalist to look like a storage expert. Tools for hosting 'user defined' applications enable flexible iSCSI deployment in many different environments including Windows, Linux, VMware ESX, or other standards-compliant iSCSI initiators. Administrators can quickly and easily setup or expand data areas, migrate data from capacity constrained servers, manage disk based backup storage areas, implement disk replication and tape backup policies, and more. Finally, 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.

NOTE: iSCSI performance varies by model and host application I/O characteristics. For best performance choose a system with a high number of drive spindles and SAS hard drives

About the AiO1200r: This high storage density, performance-optimized, and easily expandable solution built on the HP ProLiant DL185 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 all in 12-drive/2U rack-mount package. The AiO1200r is an excellent solution if you're looking for increased performance and storage capacity from up to 12 internal drives and a high performance RAID controller that's also ready for external expansion. The AiO1200r 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. Updates to the included Data Protector Express software are done as part of updates to ASM to maintain the management integration with the other AiO components. Data Protector Express should not be upgraded independently of ASM.

- A high-capacity and high-performance 5.4TB SAS model (AK223A) featuring twelve 450GB SAS HDDs

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. You can use the All-in-One Storage Manager (ASM) to select and manage the subnet for your storage traffic.

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 2000/2005/2008.

'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 application servers is more efficient and costs less to manage over time when compared to 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 network access to their 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 HP Data Protector Express software for offsite data protection and archiving, support for HP StorageWorks Storage Mirroring software for replication, hot plug disk drives (RAID), and hardware redundancy. Utilize your All-in-One Storage pool as a disk-

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

based backup target for other systems in your environment and manage Data Protector Express Virtual Library (D2D backup) objects direct from the All-in-One Storage Manager (ASM).

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 AiO400t 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 AiO400t for very few users or archival Storage Groups unless using SAS HDDs. While it is certified for VMWare ESX iSCSI connectivity, the AiO400t 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 AiO400r 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 AiO400r for very few users or archival Storage Groups unless using SAS HDDs. While it is certified for VMWare ESX iSCSI connectivity, the AiO400r 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

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SCSI (SAS) configurations.

- Sizing Guidelines: For Exchange environments, AiO600 SATA 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 approximately 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 1200r All-in-One Storage System (AiO1200r)

This high storage density, performance-optimized, and easily expandable solution built on the HP ProLiant DL185 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 all in 12-drive/2U rack-mount package. The AiO1200r is an excellent solution if you're looking for increased performance and storage capacity from up to 12 internal drives and a high performance RAID controller that's also ready for external expansion. The AiO1200r is available in both SATA and Serial Attached SCSI (SAS) configurations.

- Sizing Guidelines: For Exchange environments, AiO1200r SATA configurations are appropriate for storage groups with less than 500 mailboxes while AiO1200r SAS configurations support up to 1,500 mailboxes when using the Exchange ESRP implementation guidelines. Out-of-the-box implementations for the AiO1200r will support approximately 25% of these numbers. The AiO1200r 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 works from an application point-of-view and can help you orchestrate the many aspects of your storage environment—even if you lack storage expertise. It's like having your own storage expert in the box.
 - Rapid startup tools for fast and easy installation and out-of-the box configuration
 - Provides end-to-end management and provisioning of

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- iSCSI storage for non-clustered 32-bit and 64-bit Windows Server 2003 or (**New!**) Windows Server 2008 hosts (including derivatives like Windows Small Business Server 2008 and Windows Essential Business Server 2008) 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 Exchange 2003/2007 Storage Groups and Microsoft SQL Server 2000/2005/2008* (*SQL Server 2008 file stream functionality not supported) databases.
- **New!** Best practice and advanced dialog improvements to ASM wizards grant more control to those with more storage management experience
- Application data hosting and iSCSI Setup wizard for other 'User Defined' Application (Oracle, mySQL, VMware ESX, etc...)
- File Share creation wizard for CIFS or (New!) NFS shares with storage allocation and directory quota management.
- Data protection policy assignment (snapshots, backup, and HP StorageWorks Storage Mirroring replication) integrated into application migration and share creation wizards for data hosted on the system.
- Data Protector Express Virtual Library (D2D) device provisioning and space management as well as support for Data Protector Express D2D2Any add-on option.
- **New!** Integration with HP StorageWorks Storage Mirroring Software to accommodate asynchronous replication of file and block data to another system.
- 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 and SATA hard drives are attached to the All-in-One Storage System either internally or in externally-attached HP StorageWorks MSA enclosures.
- **New!** ASM agents now support domain servers (including Windows Server 2008, Small Business Server 2003 and Small Business Server 2008) as application host machines
- **New!** You can use ASM to specify a dedicated, primary network--plus a secondary subnet--for your IP-based storage traffic
- **New!** Disaster recovery tools work in concert with backup applications to preserve storage subsystem settings in case they need restored after a system rebuild

ASM Agent Application & OS Support Matrix

Highlights

	Microsoft Windows Server 2003 SP1	Microsoft Windows Small Business Server 2003	Microsoft Windows Server 2008	Microsoft Windows Essential Business Server 2008
Microsoft Exchange 2003 SP1	•	•		
Microsoft Exchange 2007	•*	•*	•*	•*
Microsoft SQL Server 2000 SP4	•	•		
Microsoft SQL Server 2005 SP2	•	•	•	•
Microsoft SQL Server 2008	•	•	•	•

* Exchange 2007 is only supported on 64-bit Operating Systems

ASM Feature Support Matrix

	Microsoft Windows Server 2003 SP1	Microsoft Windows Small Business Server 2003	Microsoft Windows Server 2008	Microsoft Windows Essential Business Server 2008
Data Migration	•	•	•	•
Replication with Storage Mirroring	•	•	•	•
Backup (DPX v3.5 SP2)	•	•	•	•
Virtual Library (DPX v3.5 SP2)	•	•	•**	•**
Application-aware snapshots	•	•	•	•

** Utilizing Virtual Library (D2D) functionality requires DPX, which won't support Windows Server 2008 until version 4.0

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, Windows Server 2008, VMware ESX Server 3, SUSE Linux Enterprise Server 10, RedHat Enterprise Linux 5, and Qlogic 40xx series iSCSI hardware HBAs. For additional information please visit: <http://www.microsoft.com/storage>.
- Microsoft Management Console (MMC)-based interface to setup iSCSI Target storage. This console can be used to setup

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advanced storage options. Basic iSCSI Target setup and management can be performed directly from the All-in-One Storage Manager.

- Multifunction Server Adapters support the installed Microsoft Windows Server 2003 Scalable Networking Pack, which enables TCP Chimney offload, Receive-side Scaling (RSS), and Network Direct Memory Access (NetDMA) features. **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>.

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 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

Integrated Data Protection

- 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 Data Protector Express software (v3.5 SP2) provides for disk- and tape-based backup and recovery operations. (**NOTE: Included with the AiO is the Data Protector Express Backup Server [base product] LTU. The included functionality can be increased and/or extended to the protection of other machines on the network by purchasing Data Protector Express 3.5 options. These options are listed later in this QuickSpec**)
 - 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

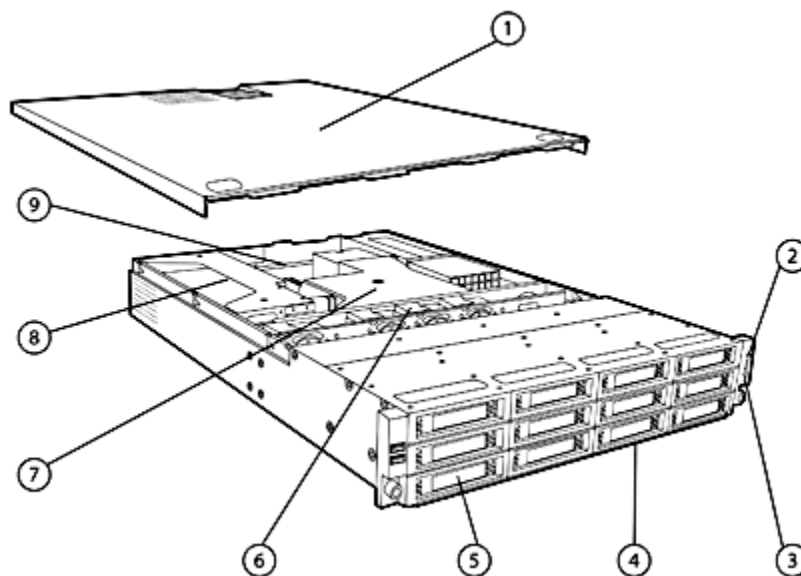
Highlights

- Configuration and Diagnostic Tools
- Support for HP StorageWorks Storage Mirroring v5 (AiO Edition) to enable replication and failover of files and iSCSI LUNs using the ASM interface and easy-to-use wizards.
 - A 60-day trial version of HP StorageWorks Storage Mirroring software is included on new systems or can be downloaded from <http://h18000.www1.hp.com/products/storage/software/sm/index.html>
 - Type in "EVAL" during the installation when you are prompted for an activation or license code

Operating System

- Microsoft Windows Storage Server 2003 Release 2, Standard Edition

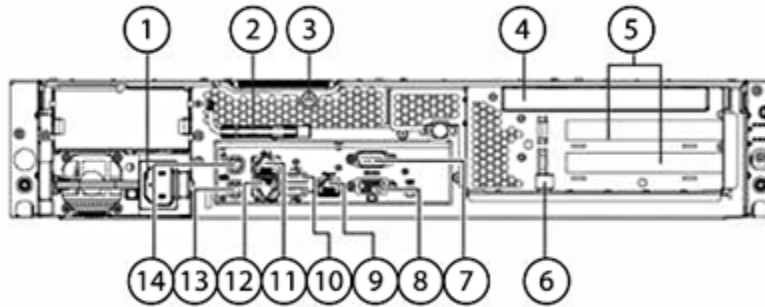
1200r All-in-One Storage System (AiO1200r)



Front View:

- | | |
|---|---|
| 1. Access panel | 6. Non Hot plug Non redundant fans (4 fans) |
| 2. Front LED Indicators | 7. Air Baffle |
| 3. Power on/off | 8. PCI Cage |
| 4. Twelve Large Form Factor (LFF) 3.5" drive bays for SATA or SAS hard drives | 9. System Board |
| 5. Front USB Ports (2) | |

Highlights



Rear View:

- | | |
|--|---------------------------------|
| 1. Power supply cable socket | 8. VGA port |
| 2. T10/T15 Wrench | 9. Lights-Out 100i Port |
| 3. Thumbscrew for top cover | 10. Two USB 2.0 ports |
| 4. Rear DVD-ROM drive | 11. GbE LAN port for NIC2 |
| 5. PCI expansion card slots (top slot occupied by Smart Array P800 controller) | 12. GbE LAN port for NIC1 |
| 6. Thumbscrew for PCI cage | 13. PS/2 keyboard port (purple) |
| 7. Serial port | 14. PS/2 mouse port (green) |

AiO1200 Hardware Specifications

Processor

- AMD Opteron™ processor Quad-Core Model 2354 2.2GHz Cache: 4 x 512KB Level 2 and 2MB shared Level 3
- One processor standard; up to 2 supported

Memory

- 2GB (2 x 1GB) standard (all SATA models)
- 4GB (2 x 2GB) standard (all SAS models)
- 8 DIMM sockets available; 4GB maximum memory (by O/S license)

NOTE: System memory in the All-in-One Storage System equates to read cache in a traditional storage array. Write cache is driven by the Storage Controller in the All-in-One Storage System.

Operating System

- Windows Storage Server 2003, Release 2 Standard Edition

Network Controller

- Embedded NC326i PCIe Dual Port Gigabit Server Adapter

Storage Controller

- Smart Array P800/512MB Controller (RAID 0/1/5/6) with BBWC and external expansion ports

Internal Storage (varies by model)

- 3TB SATA model: 12 x 250GB hot-plug SATA 7.2K MDL HDDs
- 6TB SATA model: 8 x 750GB hot-plug SATA 7.2K MDL HDDs
- 9TB SATA model: 12 x 750GB hot-plug SATA 7.2K MDL HDDs
- 12TB SATA model: 12 x 1TB hot-plug 7.2K MDL HDDs
- 2.4TB SAS model: 8 x 300GB hot plug SAS 15K ENT HDDs
- 3.6TB SAS model: 12 x 300GB hot plug SAS 15K ENT HDDs.
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- 5.4TB SAS model: 12 x 450GB hot plug SAS 15K ENT HDDs
- Optical Drive**
- Rear DVD-ROM drive
- Expansion Slots**
- (2) Full-length, full-height PCIe x8 slots (one slot occupied by Smart Array P800/512MB controller)
- Power and Cooling**
- Redundant non-hot plug power supplies
 - Non-redundant fans
- Remote Management**
- Remote system management User Interface (UI), Remote Desktop or Telnet
 - HP ProLiant Lights Out 100i remote management - Advanced Pack included
- Form Factor**
- Rack (2U), (3.5-inch)
- Warranty**
- Protected by HP Services and a worldwide network of resellers and service providers. The AiO1200r comes with a standard 1-1-1 warranty (1 year parts exchange, 1 year labor, and 1 year onsite, next business day response) which can be upgraded to same day support through HP Care Packs. Certain restrictions and exclusions apply. SATA hard drives have a one-year warranty. Warranty also includes a 1 year Software Support Carepack.

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

- **HP StorageWorks Storage Mirroring (AiO Edition)** - 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.

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. The HP All-in-One Storage System includes the Data Protector Express 3.5 SP2 Backup Server which enables the backup and recovery of file and iSCSI data on the AiO and the setup and management of Data Protector Express Virtual Libraries for D2D backup and recovery.

Options can be added to the Data Protector Express Backup Server to increase the functionality of the protection: The D2D2Any option enables automatic movement of backup data on disk (Data Protector Express Virtual Library) to tape. The Drive Expansion option enables the use of multi-drive tape libraries as backup targets.

Options can be added to the Data Protector Express Backup Server to extend the protection to data stored locally networked servers. Each protected server requires the Network Server Client Agent.

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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.

- **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 AiO1200r, 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 AiO1200r product support can be uplifted to 24x7 for up to 5 years.

The HP AiO1200r comes with a 1-1-1 hardware warranty (1 year parts exchange, 1 year labor, and 1 year 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 Step 6 in the Product Configuration Wizard below, or visit 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>.

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.

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.

Service and Support, HP Care Pack, and Warranty Information

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.

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>

Service and Support, HP Care Pack, and Warranty Information

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".

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

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 your HP All-in-One Storage System based on capacity, performance scalability, and redundancy requirements.

HP StorageWorks 1200r All-in-One Storage System

HP StorageWorks AiO1200r Common Specifications	Operating System	Windows Storage Server 2003 Release 2, Standard Edition
	Processor	Quad-core AMD Opteron™ Model 2354 (2.2GHz, 75W ACP). 1 installed, 2 supported. Cache: 4 x 512KB Level 2 and 2MB shared Level 3.
	Memory	8 DIMM sockets available (4GB maximum-limited by O/S license). Standard memory varies between SATA and SAS models (see below).
	Storage Controller	HP Smart Array P800/512MB Controller with battery-backed write cache (BBWC); occupies one PCIe slot
	Optical Drive	Rear DVD-ROM drive
	Network Controller	Embedded NC326i PCIe Dual-Port Gigabit Server Adapter
	Form Factor	Rack (2U), (3.5-inch)
	Power and Cooling	Redundant 750W non-hot plug power supplies; Non-redundant fans
	Remote Management	Remote management User Interface (UI), Remote Desktop, or Telnet. HP ProLiant Lights Out 100i remote management - Advanced Pack included
	File Serving 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, Windows Server 2008, VMware ESX Server 3, SUSE Linux Enterprise Server 10, RedHat Enterprise Linux 5, and Qlogic 40xx series iSCSI hardware HBAs. For additional information please visit: http://www.microsoft.com/storage .

HP StorageWorks AiO1200r 3TB SATA Storage System AK218A	Memory	2GB (2 x 1GB). Expandable to 4GB.
	Internal Storage	12 x 250GB front loading, hot-plug, 7.2K RPM SATA MDL HDDs

HP StorageWorks AiO1200r 6TB SATA Storage System AK219A	Memory	2GB (2 x 1GB). Expandable to 4GB.
	Internal Storage	8 x 750GB front loading, hot-plug, 7.2K RPM SATA MDL HDDs NOTE: Up to 4 additional drives supported.

HP StorageWorks AiO1200r 9TB SATA Storage System AK220A	Memory	2GB (2 x 1GB). Expandable to 4GB.
	Internal Storage	12 x 750GB front loading, hot-plug, 7.2K RPM SATA MDL HDDs



Product Configuration

HP StorageWorks AiO1200r 12TB SATA Storage System AM527A	Memory	2GB (2 x 1GB). Expandable to 4GB.
	Internal Storage	12 x 1TB front loading, hot-plug, 7.2K RPM SATA MDL HDDs
HP StorageWorks AiO1200r 2.4TB SAS Storage System AK221A	Memory	4GB (2 x 2GB). (Max by OS License)
	Internal Storage	8 x 300GB front loading, hot-plug, 15K RPM Serial Attached SCSI (SAS) ENT HDDs NOTE: Up to 4 additional drives supported.
HP StorageWorks AiO1200r 3.6TB SAS Storage System AK222A	Memory	4GB (2 x 2GB). (Max by OS License)
	Internal Storage	12 x 300GB front loading, hot-plug, 15K RPM Serial Attached SCSI (SAS) ENT HDDs
HP StorageWorks AiO1200r 5.4TB SAS Storage System AK223A	Memory	4GB (2 x 2GB). (Max by OS License)
	Internal Storage	12 x 450GB front loading, hot-plug, 15K RPM Serial Attached SCSI (SAS) ENT HDDs

Step 2 - Select expansion options

Additional Processor	NOTE: You can add a second processor to any AiO1200r. AMD Opteron™ processor 2354 (2.2GHz, 75W ACP)	468547-B21
Additional Memory	NOTE: SATA Models come with 2GB of RAM and can be upgraded to 4GB. SAS Models already have 4GB and cannot be expanded by license.	
	1 GB REG PC2-5300 2 x 512 MB Single Rank Kit	408850-B21
	2 GB REG PC2-5300 2 x 1 GB Low Power Single Rank Kit	483399-B21
	2 GB REG PC2-5300 2 x 1 GB Single Rank Kit	408851-B21

The AiO1200r has one full-length, full-height PCI Express x8 slot available for additional network ports, a backup HBA, or additional storage expansion.

NOTE: Choose only one expansion card (if any)

NOTE: A Smart Array P800 controller can also support external tape backup connect (except for libraries and autoloaders). Choose only one expansion card.

Network Adapters	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	
	HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	
	HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	

Product Configuration

Storage Controllers	<p>NOTE: The AiO1200r already includes a Smart Array P800 controller which features 2 external SAS ports for expansion. Select one of the following cards if you want to expand to additional enclosures beyond what is supported from the existing P800.</p> <p>Smart Array E500 Controller HP Smart Array E500/256MB Controller 435129-B21 HP Internal SAS/SATA 4-Port Cable 457692-B21</p> <p>NOTE: The purchase of a SAS Storage Controller requires the purchase of HP SAS/SATA 4-Port Cable</p> <p>Smart Array P800 Controller HP Smart Array P800/512MB BBWC Controller 381513-B21</p>
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Storage HBAs	<p>SAS HBAs HP SC44Ge Host Bus Adapter 416096-B21</p> <p>NOTE: For external tape support only</p> <p>NOTE: Please see the HBA QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html (SC44Ge HBA)</p> <p>SCSI HBAs HP SC11Xe Host Bus Adapter (PCI-e) 412911-B21 HP U320e SCSI Host Bus Adapter AH627A</p> <p>NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)</p>
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Step 3 - Add optional software

Data Protector Express extensions

NOTE: HP All-in-One Storage Systems ship with the HP Data Protector Express Backup installed. No options are required to backup file or iSCSI block data on the AiO. The following extensions can be added to increase the data protection functionality of the AiO and extend the protection to locally stored data on other machines on the network by enabling the AiO as a backup target. The most commonly added options are below, for more information on other Data Protector Express options please visit: <http://www.hp.com/go/dataprotectorexpress/options>.

Optional extensions	<p>Data Protector Express D2D2Any option BB130AA Enable automatic movement / copy of backup data on AiO hasted Data Protector Express Virtual Library (disk) to tape</p> <p>Data Protector Express Drive Expansion BB133AA Enable multi-drive tape libraries to be used as backup targets or for archive</p> <p>Data Protector Express Network Server Client Agent BB121AA Enable networked machines to have locally stored data protected by backup to Data Protector Express Virtual Library or tape device hosted on AiO</p> <p>Data Protector Express Network Server Client Agent 3 pack BB122AA (one LTU per machine)</p>
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Product Configuration

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.

NOTE: An installable evaluation copy of HP Storage Mirroring is included with HP AiO Storage Systems. All features and options are enabled during the 60-day evaluation period. Simply type in "EVAL" during the installation when you are prompted for an activation or license code to start your evaluation.

Step 4 - Add external storage disk array for additional capacity

The AiO1200r has one one full-length, full-height PCI Express x8 slot available for additional network ports, a backup HBA, or additional storage expansion.

NOTE: Choose only one expansion card (if any)

NOTE: A Smart Array P800 controller can also support external tape backup connect (except for libraries and autoloaders)

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 SAS and 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
AiO1200r	MSA50	2 per controller	HP Smart Array P800/512 BBWC or E500/256 BBWC
AiO1200r	MSA70		
AiO1200r	MSA60	4 per controller	HP Smart Array P800/512 BBWC or E500/256 BBWC

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

HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 NOTE: Rack-mountable 10 drive (2.5" SAS/SATA) 1U enclosure with 3Gb/s SAS host connectivity and redundant power supplies.	364430-B21
HP StorageWorks Modular Smart Array 60	HP StorageWorks Modular Smart Array 60 NOTE: Rack-mountable 12 drive (3.5" SAS/SATA) 2U enclosure with 3Gb/s SAS host connectivity and redundant power supplies.	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
HP StorageWorks Modular Smart Array 70	HP StorageWorks Modular Smart Array 70 NOTE: Rack-mountable 25 drive (2.5" SAS/SATA) 2U 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

Product Configuration

HP StorageWorks MSA70 3.6TB SAS HDD Bundle (MSA70 w/25 146GB 10K SAS SFF HDD) AG893A

Hard Drives (Internal Expansion)	SAS Enterprise (ENT) Drives 3.5", Hot Plug	
	HP 450GB 3G 15K 3.5" DP SAS ENT HDD	454232-B21
	HP 300GB 3G SAS 15K 3.5" DP HDD	416127-B21
	HP 146GB 3G SAS 15K 3.5" DP HDD	384854-B21
	HP 72GB 3G SAS 15K 3.5" DP HDD	384852-B21
	SATA Midline (MDL) Drives 3.5", Hot Plug	
	HP 1TB 3G SATA 7.2K 3.5" MDL HDD	454146-B21
	HP 750GB 3G SATA 7.2K 3.5" MDL HDD	458930-B21
	HP 500GB 3G SATA 7.2K 3.5" MDL HDD	458928-B21
	HP 250GB 3G SATA 7.2K 3.5" MDL HDD	458926-B21

Hard Drives (External Expansion)	SAS Enterprise (ENT) Drives 3.5", Hot Plug	
	HP 450GB 3G 15K 3.5" DP SAS ENT HDD	454232-B21
	HP 300GB 3G SAS 15K 3.5" SP HDD	431944-B21
	HP 300GB 3G SAS 15K 3.5" DP HDD	416127-B21
	HP 146GB 3G SAS 15K 3.5" SP HDD	375872-B21
	HP 146GB 3G SAS 15K 3.5" DP HDD	384854-B21
	HP 72GB 3G SAS 15K 3.5" SP HDD	375870-B21
	HP 72GB 3G SAS 15K 3.5" DP HDD	384852-B21
	SAS Midline (MDL) Drives 3.5", Hot Plug	
	HP 1TB 7.2K 3.5" DP SAS MDL HDD	461137-B21
	HP 750GB 7.2K 3.5" DP SAS MDL HDD	461135-B21
	SAS Enterprise (ENT) Drives 2.5" Drives, Hot Plug	
	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
	HP 146GB 3G SAS 10K SFF DP HDD	418367-B21
	HP 72GB 3G SAS 10K SFF SP HDD	375861-B21
	HP 72GB 3G SAS 10K SFF DP HDD	384842-B21
	HP 72GB 3G SAS 15K SFF SP HDD	431935-B21
	HP 72GB 3G SAS 15K SFF DP HDD	418371-B21
	HP 36GB 3G SAS 15K SFF SP HDD	431933-B21
	HP 36GB 3G SAS 15K SFF DP HDD	418369-B21
	NOTE: Please see the SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	
	SATA Midline (MDL) Drives 3.5", Hot Plug	
	HP 1TB 3G SATA 7.2K 3.5" MDL HDD	454146-B21
	HP 750GB 3G SATA 7.2K 3.5" MDL HDD	458930-B21
	HP 500GB 3G SATA 7.2K 3.5" MDL HDD	458928-B21
	HP 250GB 3G SATA 7.2K 3.5" MDL HDD	458926-B21
	SATA Entry (ETY) Drives 2.5", Hot Plug	
HP 120GB 3G SATA 5.4K SFF ETY HDD	458924-B21	

Product Configuration

HP 60GB SATA 5.4K SFF HDD

379306-B21

NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:

http://h18000.www1.hp.com/products/quickspecs/12091_div/12091_div.html
(Worldwide)

Step 5 - Add tape backup solution

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

HP StorageWorks Ultrium Tape Drive

HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028B
HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920	EH903A
HP StorageWorks 3U Rack-mount kit with one Ultrium 960 (Carbonite)	Q1595B
HP StorageWorks 1U SAS Rack-mount kit with one LTO-4 Ultrium 1760	EH946A
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_div/11739_div.html
(Worldwide)

http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html
(Worldwide)

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 G2 LTO-4 Ultrium 1760 SCSI Tape Autoloader	AJ816A
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>

Product Configuration

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 LTO-4 Ultrium 1760 SCSI Drive Library	AJ817A
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 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 2 LTO-4 Ultrium 1760 SCSI Drive Library	AJ818A
HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library	AJ035A
HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library	AJ036A

NOTE: Please reference the MSL Tape Library 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>.

Step 6 - Add HP CarePack services

AiO1200r CarePacks			Bundled	Bundled
HP Software Support for Storage, 9 x 5	1 year		Bundled	
	3 years		n/a	HA106A3 - 9KA
	4 years		n/a	HA106A4 - 9KA
	5 years		n/a	HA106A5 - 9KA
HP Software Support for Storage, 24 x 7	1 year		n/a	HA107A1 - 9KA
	3 years		n/a	HA107A3 - 9KA
	4 years		n/a	HA107A4 - 9KA
	5 years		n/a	HA107A5 - 9KA
Support Plus for Storage	1 year		UK460E	HA109A1 - 9KA
	3 years		UK463E	HA109A3 - 9KA
	4 years		n/a	HA109A4 - 9KA
	5 years		n/a	HA109A5 - 9KA
	Post Warranty		UK485PE	n/a
Support Plus 24 for Storage	1 year		UK461E	HA110A1 - 9KA
	3 years		UK464E	HA110A3 - 9KA
	4 years		n/a	HA110A4 - 9KA
	5 years		n/a	HA110A5 - 9KA
	Post Warranty		UK459PE	n/a

Product Configuration

Proactive 24 (P24)	1 year	n/a	HA111A1 - 9KA
	3 years	n/a	HA111A3 - 9KA
	4 years	n/a	HA111A4 - 9KA
	5 years	n/a	HA111A5 - 9KA
	Critical Support (CS)	1 year	n/a
	3 years	n/a	HA112A3 - 9KA
	4 years	n/a	HA112A4 - 9KA
	5 years	n/a	HA112A5 - 9KA
	6 hour CTR	1 year	UK462E
	3 years	UK465E	HA105A3 - 9KA
	4 years	n/a	HA105A4 - 9KA
	5 years	n/a	HA105A5 - 9KA
Installation	n/a	UF285E	HA113A1 - 5D6

Additional Specifications

AiO1200r Additional Specifications	Dimensions (H x W x D) (with bezel)	3.44x 17.64 x 27.50 in (8.75 x 44.80 x 69.88cm)		
	Weight (approximate)	Maximum	51.5 lb (19.22 kg) (all hard drives, power supplies, and processors installed)	
	Input Requirements (per power supply)	Rated Line Voltage	100 -- 240 VAC	
		Rated Input Current	9.10 A (at 100 VAC), 4.5 A (at 200 VAC)	
		Rated Input Frequency	50 to 60 Hz	
		Rated Input Power	910 W (at 100 VAC), 900 W (at 200 VAC)	
	BTU Rating	Maximum	3107.82 BTU/hr (at 100 VAC), 3073.67 BTU/hr (at 200 VAC)	
	Power Specifications	To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls		
			<ul style="list-style-type: none"> ● Click on the system of interest. Example: DL380 G5 ● Follow the instructions of the next screens. 	
	Power Supply Output (per power supply)	Rated Steady-State Power	750 W (at 100 VAC), 750 W (at 200 VAC)	
	Maximum Peak Power	750 W (at 100 VAC), 750W (at 200 VAC)		
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).		
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).		
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.		
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.		
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).		
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).		

Additional Specifications

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle

LWAd	6.7 B
LpAm	51 dBA

Operating

LWAd	6.7 B
LpAm	51 dBA

NC326i PCIe Dual Port Network Interface Gigabit Server Adapter Compatibility

10Base-T/100Base-TX/1000Base-TX

IEEE 802.3 10Base-T

IEEE 802.3 1000Base-T

IEEE 802.3 100Base-TX

Data Transfer Method 64-bit, 133MHz PCI(X)1.0

Network Transfer Rate 10Base-T (Half-Duplex) 10 Mb/s

10Base-T (Full-Duplex) 20 Mb/s

100Base-TX (Half-Duplex) 100 Mb/s

100Base-TX (Full-Duplex) 200 Mb/s

1000Base-TX (Half and Full-Duplex) 2000 Mb/s

Connector

RJ-45

Cable Support

10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m)

10/100/1000Base-TX Category 5 UTP (2 Pair); up to 328 ft (100 m)

Environment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at:

<http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Additional Specifications

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