

### MODELS

#### *RA3000 Models*

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**RA3000 Pedestal (120V)**

*DS-SWXRA-GA*  
*116261-B21*

**RA3000 Pedestal (230V)**

*DS-SWXRA-GC*  
*116262-B21*

**RA3000 Rackmount (110V)**

*DS-SWXRA-GH*  
*116266-B21*

**RA3000 Rackmount (230V)**

*DS-SWXRA-GK*  
*116267-B21*

**Feature List:**

- Redundant RAID architecture ensures fault tolerance against system outages and data loss
- System supports the latest in 7200 and 10K RPM 9, 18, and 36-GB UltraSCSI drives which allows up to 873 GB of storage capacity
- Support for Windows NT/Windows 2000, *OpenVMS™*, *Tru64™*, Novell NetWare, IBM AIX, HP-UX and SUN Solaris
- Available in pedestal and rackmount versions
- Centralized storage management using enhanced *StorageWorks™* Command Console by Compaq
- Optional dual active controllers with failover for increased reliability

Note: Sales of platform kits for Novell NetWare, IBM AIX, HP-UX, and SUN Solaris ended March 31, 2001

### OVERVIEW

**RA3000 Customer benefits include:**

- Optional dual redundant active-active controllers with mirrored write back cache to provide maximum performance and complete data integrity
- Low cost, fully integrated UltraSCSI *StorageWorks* external RAID array
- Redundant RAID architecture ensures fault tolerance against system outages and data loss
- Pedestal and rackmount versions allow greater flexibility
- Continuous access to critical applications and data through controller failover, hot swap components, and failover to hot spares
- System scaleable from 63 GB to 873 GB of total storage capacity

**Product Family Models:**

- The RA3000 is positioned as a low cost storage solution and a companion to the RA8000 and the ESA12000 SCSI storage systems.



### KEY FEATURES

- Redundant RAID architecture ensures fault tolerance against system outages and data loss
- System supports the latest in 7200 and 10K RPM 9, 18, and 36-GB UltraSCSI drives which allows up to 873 GB of storage capacity
- Support for Windows NT/Windows 2000, *Tru64*, Open VMS, Novell NetWare, IBM AIX, HP-UX and SUN Solaris
- Available in pedestal and rackmount versions
- Support for up to 14 disk drives (7 drives per pedestal) in the pedestal model for up to 509 GB total capacity
- Support for up to 24 disk drives (6 drives per enclosure) in the rackmount model for up to 873 GB total capacity
- Supports two independent hosts or one independent cluster
- Centralized storage management using enhanced *StorageWorks* Command Console
- Optional dual active controllers with failover for increased reliability
- Optional dual redundant active-active controllers with mirrored write back cache to provide maximum performance and complete data integrity
- Cluster support includes: Microsoft Cluster Server (Wolfpack), Microsoft NT 4.0 Enterprise Cluster, Windows 2000 Advanced Server Cluster, *Tru64* UNIX *TruCluster*<sup>™</sup>, Novell NetWare High Availability server (Orion 1), and Open VMS clusters

### PRODUCT HIGHLIGHTS

#### Capacity

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	Maximum disks	Total Storage Capacity
Pedestal	14 disks (with pedestal expansion unit)	509 GB
Rackmount	24 disks (with four drive enclosures)	873 GB

#### Environment Monitoring Unit (EMU)

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Monitors power and temperature

#### Fault Tolerance

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Fully redundant hot-swap components  
Redundant RAID architecture  
Optional dual active controllers with failover

#### Fault Recovery

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Failover to hot spares  
Automatic monitoring and event notification

#### High Availability

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Fully redundant components

#### Hot Pluggable Support

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Hot Swap controllers, cooling, drives, and power  
Failover to hot spares

#### Manageability

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Centralized storage management using enhanced *StorageWorks* Command Console including remote fault notification to the user's pager

#### Scalability

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	One Unit Capacity	Maximum
Pedestal	254 GB	509 GB
Rackmount	218 GB	873 GB

#### O/S Support

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Supports Windows NT/Windows 2000, Novell NetWare, *Tru64* UNIX, Open VMS, SUN Solaris, HP-UX, and IBM AIX

Note: Sales for Novell NetWare, SUN Solaris, HP-UX, and IBM AIX platform kits ended March 31, 2001.

#### Rack Density

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Controller and disk enclosures	4U
UPS	2U

### RA3000 SPECIFICATIONS

<b>Protocol Support</b>	Ultra2/Ultra3		
<b>O/S Support</b>	Windows NT x86 4.0, Service Pack 6a/Windows 2000 Service Pack 1 Windows NT Alpha 4.0 Novell NetWare 4.11, 4.2 <i>Tru64</i> UNIX v4.0F, 5.0a, 5.1 Open VMS V7.1, 7.1-2, 7.2, 7.2-1H1, 7.2-1 Sun Solaris V2.5.1, 2.6, 2.7 HP-UX v10.2, 11.0 IBM AIX v4.2, 4.3.3, 4.3.1m, 4.3.2		
<b>Dimensions</b>	<b>Pedestal Dimensions</b>	<b>Unpacked</b>	<b>Shipping</b>
	Height	16 in/406 mm	22.2 in/564 mm
	Width	10 in/254 mm	22.3 in/565 mm
	Depth	19.5 in/494 mm	34.9 in/886 mm
	Weight	59 lbs/27 kg	98 lbs/45 kg
	<b>Rackmount 4U</b>	<b>Controller and disk shelves</b>	<b>UPS</b>
	Height	5.9 in/150 mm	88.9mm/3.5 in
	Width	17.5 in/445mm	19 in/482.6 mm
	Depth	13.8 in/350mm	16 in/406.4mm
	Controller Shelf Weight	21 lbs/9.5 kg	58 lbs/27 kg
Disk Shelf Weight	16 lbs/7.3 kg		
<b>UPC Code</b>	RA3000 Pedestal (120V)	DS-SWXRA-GA 116261-B21	743172811455
	RA3000 Pedestal (240V)	DS-SWXRA-GC 116262-B21	743172811462
	RA3000 Rackmount (110V)	DS-SWXRA-GH 116266-B21	743172811509
	RA3000 Rackmount (230V)	DS-SWXRA-GK 116267-B21	743172811516
<b>Cache</b>	16-MB cache standard-up to 128 MB with two controllers		
<b>Disks Supported</b>	<b>Recommended</b> disk drives for use on the pedestal and rackmount versions		
	<b>Description</b>	<b>Part number</b>	
	9.1 GB, 10000 RPM, in 3.5" SBB	DS-RZ1DD-VW (380588-B21)	
	18.2 GB, 10000 RPM, in 3.5" SBB	DS-RZ1ED-VW (380589-B21)	
	36.4 GB, 10000 RPM in 3.5" SBB	DS-RZ1FC-VW (159138-001)	
	9.1 GB, 7200 RPM, in 3.5" SBB	DS-RZ1DA-VW (147597-001)	
	18.2 GB, 7200 RPM, in 3.5" SBB	DS-RZ1EA-VW (147598-001)	
	36.4 GB, 7200 RPM, in 3.5" SBB	DS-RZ1FB-VW (147599-001)	

### RA3000 SPECIFICATIONS *(continued)*

<b>Disks Supported</b> <i>(continued)</i>	<b>Supported</b> disk drives for use on the pedestal and rackmount versions	
	<b>Disks Supported But No Longer Available for Sale</b>	
	4.3 GB, 7200 RPM, in 3.5" SBB	DS-RZ1CF-VW (380691-B21)
	9.1 GB, 7200 RPM, in 3.5" SBB	DS-RZ1DF-VW (380595-B21)
	18.2 GB, 7200 RPM, in 3.5" SBB	DS-RZ1EF-VW (380694-B21)
	4.3 GB, 10000 RPM, in 3.5" SBB	DS-RZ1CD-VW
	2.0 GB, 7200 RPM, in 3.5" SBB	DS-RZ1BB-VW (380695-B21)
	4.3 GB, 7200 RPM, in 3.5" SBB	DS-RZ1CB-VW
	9.1 GB, 7200 RPM, in 3.5" SBB	DS-RZ1DB-VW (380693-B21)
<b>Maximum Number of Devices/Ports</b>	Supports two independent hosts or one independent cluster	
<b>Maximum Transfer Rate</b>	39.5 MB per second per controller pair	
<b>Power</b>	Pedestal	110 to 120/220 to 240 VAC, 50 to 60 Hz, Single Phase, 1.5/0.7A each power cord
	Rackmount	Two 180 Watt power modules @2.5/1.2 A each
	120 VOLT UPS	100 to 127 VAC, 50/60 Hz, Single Phase
	230 VOLT UPS	228 to 240 VAC, 50/60 Hz, Single Phase
<b>Relative Humidity</b> (non-condensing)	10% to 90%	
	Maximum wet-bulb temp of 82°F/28°C	
	Minimum dew point of 36°F/2° C Brief description	
<b>Temperature Range</b>	Optimal	64° to 74°F/18° to 24°C
	Minimum	50° to 104°F/10° to 40°C

## SERVICE & SUPPORT, HP CARE PACK AND WARRANTY INFORMATION

### Software Product Services

- Standalone telephone support
- Rights to new license version
- Media and documentation updates

### Hardware Product Services

- Installation services
- On-site maintenance (includes warranty support)
- Response time upgrades during the warranty period
- Post-warranty coverage
- RAID setup and performance consulting via statement of work

For additional hardware installation and maintenance information, please refer to the URLs listed below:

<http://h18005.www1.hp.com/services/carepaq/us/install/>

<http://h18005.www1.hp.com/services/carepaq/us/hardware/>

### Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4 hours
- Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days
- Duration - Select duration of coverage for a period of 1, 3, or 5 years

### HP Care Pack Information

Part numbers:

- FM-R6XHW-36, 3 year, uplift to 5 x 9, Next Day Response
- FM-R6XHW-60, 5 year, uplift to 5 x 9, Next Day Response
- FM-R64HR-12, 1 year, uplift to 5 x 9, 4-hour Response
- FM-R64HR-36, 3 year, uplift to 5 x 9, 4-hour Response
- FM-R64HR-60, 5 year, uplift to 5 x 9, 4-hour Response
- FM-R6724-12, 1 year, uplift to 7 x 24, 4-hour Response
- FM-R6724-36, 3 year, uplift to 7 x 24, 4-hour Response
- FM-R6724-60, 5 year, uplift to 7 x 24, 4-hour Response

- 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.

For additional HP Care Pack (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below:

<http://h18005.www1.hp.com/services/carepaq/index.html>

### Components

The following brick level options/components do not have individual HP Care Pack Services. These items will be included in product HP Care Pack Services into which they are installed.

Disk Drives	Tape Drives	CD/DVD ROM	SCSI Hubs in SBBs	Adapters
Bus Converters	Backplane RAID Controllers	Power Supplies	Cabling	Fans

### CONFIGURATION INFORMATION

#### STEP 1 – RA3000 – BASE CONFIGURATION

Select one:

Model	Part Number	Model Description:
RA3000 Pedestal (120 V)	DS-SWXRA-GA 116261-B21	Seven slot pedestal for wide UltraSCSI disk SBBs, one HSZ22 two channel controller with 16 MB cache, Environmental Monitoring Unit (EMU), two 204 W power supplies with fans, 5 meter host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9f), 700 VA 120 V UPS, North American power cords. Disks are not included. Order country-power cords separately.
RA3000 Pedestal (230 V)	DS-SWXRA-GC 116262-B21	Seven slot pedestal for wide UltraSCSI disk SBBs, one HSZ22 two channel controller with 16 MB cache, Environmental Monitoring Unit (EMU), two 204 W power supplies with fans, 5 meter host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9f), 700 VA 230 V UPS. Disks are not included. Order country-power cords separately.
RA3000 Rackmount (110 V)	DS-SWXRA-GH 116266-B21	Ultra SCSI BA356 controller shelf, one HSZ22 two channel controller with 16 MB cache, integrated Environmental Monitoring Unit (EMU), two 180 Watt power supplies, two dual port host differential UltraSCSI I/O SBBs, Dual channel UltraSCSI single-ended personality modules, one 120V 1000VA rackmount UPS, 5 meter host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9), two 68 HD tri-link adapters (H8861-AA), North American power cords, and RETMA mounting bracket. Disk shelves and disks are not included.
RA3000 Rackmount (230 V)	DS-SWXRA-GK 116267-B21	UltraSCSI BA356 controller shelf, one HSZ22 two channel controller with 16 MB cache, integrated Environmental Monitoring Unit (EMU), two 180 Watt power supplies, two dual port host differential UltraSCSI I/O SBBs, Dual channel UltraSCSI single-ended personality modules, one 230V 1000VA rackmount UPS, 5 meter host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9), two 68 HD tri-link adapters (H8861-AA), RETMA mounting bracket. Disk shelves and disks are not included.

#### STEP 2 – REQUIRED OPTIONS

Solutions Software kit and host adapters (by host platform)

Host platform	RA3000 Solutions Software Kits	Recommended adapters
Windows NT x86/ Windows 2000/PCI	QB-5TWAE-SA	SWXA3-BD
Tru64 UNIX	QB-5TWAB-SA	KZPBA-CB
OpenVMS	QB-5TWAC-SA	KZPBA-CB
<b>Kits Supported but no longer available for sale.</b>		
Windows NT Alpha	QB-5TWAD-SA	FR-PCTAZ-FB or SWXA3-BD
Novell NetWare	QB-5TWAF-SA	SWXA3-BD
SUN Solaris	QB-5TWAG-SA	SUN 6541A, SUN X1065A, Compaq SWSA3-CA, PTI SBS450
HP-UX	QB-5TWAJ-SA	HP A2969A, A4107A, A28696 A, HP4107A, Embedded: 735,755,J, C, D
IBM AIX	QB-5TWAK-SA	IBM FC6207 PCI Ultra

Disks – See “Disks Supported” above

Disk Shelves – Select one to four disk shelves

DS-SWXRA-GN 116268-B21

Includes: UltraSCSI BA356 disk shelf, two 180 W power supplies, single-ended UltraSCSI personality card, one half meter SCSI cable (BN37A-0E), two North American power cords, RETMA mounting bracket, disks are not included. **Note:** Requires two country power cords

### CONFIGURATION INFORMATION *(continued)*

#### STEP 3 – ADDITIONAL OPTIONS

Select each option with quantities specified

Part	Part number	Description with parts shipped
Second HSZ22 controller with 16 MB of cache	DS-HSZ22-AA <i>116264-B21</i>	Second HSZ22 controller with 16 MB of cache and two 16 MB SIMMs for mirror cache for a total of 64 MB total cache, one BN37A 05 5 meter UltraSCSI cable, one BN38E-OB cable adapter—field installable only. <b>Note:</b> Second HSZ22 controller does not require and additional Solution Software Kit.
Second HSZ22 controller with 32 MB of cache	DS-HSZ22-AB	Second HSZ22 controller with 32 MB of cache and three 32 MB SIMMs for mirror cache for a total of 128 MB total cache, one BN37A 05 5 meter UltraSCSI cable, one BN38E-OB cable adapter—field installable only. <b>Note:</b> Second HSZ22 controller does not require an additional Solution Software Kit.
Expansion pedestal (120/240V)	DS-SWXRA-GD <i>116265-B21</i>	Expansion pedestal (120/240V) for seven additional UltraSCSI disk drives, one meter UltraSCSI cable (BN37A-01), North American power cords, 220 Volt power cords ordered separately. Maximum of one expansion pedestal supported.

#### Power cords

- Some cabinets are configured for power distribution. Check cabinet documentation to determine if power cords are required in your intended configuration.
- Two North American power cords (BN27S-03) are included in the 120 V variant (DS-SWXRA-GN) and in the disk expansion shelf (DS-SWXRA-GN).
- Country-specific power cords must be ordered separately for use outside North America. Two power cords are required for pedestal and two for the expansion pedestal.

BN27S-03 Power cord for USA  
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