

release notes

hp StorageWorks enterprise virtual array 3000

Product Version: 2.0

Second Edition (June 2003)

Part Number: AA-RUCSB-TE

This document contains the most recent product information about the HP StorageWorks Enterprise Virtual Array 3000, as well as supplemental, support, and product feature details.

For the latest version of these Release Notes and other HP StorageWorks Enterprise Virtual Array 3000 documentation, go to the following website: <http://www.hp.com/go/eva3000>



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Enterprise Virtual Array 3000 Release Notes
Second Edition (June 2003)
Part Number: AA-RUCSB-TE

Release Notes Contents

These release notes cover the following major topics:

- [Enterprise Virtual Array 3000 Storage System Overview](#), page 4
- [Supported Operating Systems](#), page 7
- [Supported Disks](#), page 11
- [Supported Servers](#), page 12
- [Documentation Updates](#), page 16

Intended Audience

This document is intended to assist customers who purchased the HP StorageWorks Enterprise Virtual Array 3000 and the following associated software:

- HP StorageWorks Virtual Controller Software V2.0 for HSV100
- HP StorageWorks Business Copy EVA

This document is also intended for use by HP Customer Service personnel responsible for installing and maintaining designated devices associated with this storage system.

Enterprise Virtual Array 3000 Storage System Overview

This document contains the most recent product information about the Enterprise Virtual Array 3000 storage system. Much of the information in these notes is not documented elsewhere, so it is recommended that you read this information thoroughly before installing and operating the storage system.

VCS Upgraded to v2.005

The Enterprise Virtual Array 3000 storage system VCS has been upgraded from v2.004 to v2.005. The storage system is now shipping with VCS v2.005 installed. Storage systems that currently have VCS v2.004 installed can be upgraded to v2.005. Although this is not a mandatory upgrade, VCS v2.005 includes improvements that enhance the performance and reliability of the Enterprise Virtual Array 3000.

For more information on VCS v2.005, refer to the VCS v2.005 Release Notes (EK-E1REL-RA. G01). The Release Notes are included in the VCS v2.005 download package, which can be downloaded from the following web site:

<http://h18006.www1.hp.com/products/sanworks/softwaredrivers/vcs/index.html>

Enterprise Virtual Array 3000 Documentation

The Enterprise Virtual Array Catalog of Associated Documentation is included on the EVA Technical Documentation page. This document contains a comprehensive list of Enterprise Virtual Array 3000 documentation, including associated product documentation that may be required to operate your storage system. To access the technical documentation page, go to:

<http://www.hp.com/go/eva3000>

HP StorageWorks Virtual Controller Software V2.0 for HSV100 Kit Contents

The VCS v2.0 for HSV100 kit contains the following items:

- *HP StorageWorks Enterprise Virtual Array 3000 Read Me First*
- *HP StorageWorks Enterprise Virtual Array 3000 Release Notes*
- *HP StorageWorks System Software for Enterprise Virtual Array 3000 Installation Instructions*

- *HP StorageWorks Enterprise Virtual Array 3000 Software Compatibility Notice*
- *HP StorageWorks Enterprise Virtual Array 3000 How to Get More Information*
- Licensing Materials
- *HP StorageWorks Command View EVA v2.1 CD-ROM*
- *HP StorageWorks System Software for Enterprise Virtual Array 3000 v2.004 CD-ROM*
- *HP OpenView Storage Management Appliance Software v2.0 SP2 package, which includes the following:*
 - Storage Management Appliance software v2.0 SP2 CD-ROM
 - Associated documentation

Support Release Information

For product support release information, go to:
<http://h18007.www1.hp.com/support/files/storage/index.html>. This website provides downloadables for storage products.

To download management appliance updates, go to:
<http://h18006.www1.hp.com/products/sanworks/managementappliance/index.html>

To access Enterprise Virtual Array 3000 product support, go to:
<http://www.hp.com/go/eva3000>

Supported Configurations

Refer to the Enterprise Virtual Array 3000 Quick Specs for supported configurations.

Maximum Operating Parameters

The maximum values for several storage system operating parameters are listed in [Table 1](#).

Table 1: Maximum Operating Parameters

Parameter	Maximum Value
Virtual Disks	512
Host Presentation	8192—calculated as the number of hosts multiplied by the number of presented LUNs.
Snapshots	7 per virtual disk

Supported Operating Systems

The Enterprise Virtual Array storage system is compatible with the following operating systems:

- Tru64 UNIX
- Windows NT
- Windows 2000
- Windows Data Center Advanced Server
- OpenVMS
- Sun Solaris
- HP-UX
- IBM AIX
- Linux
- NetWare

[Table 2](#) lists the operating systems specifications required for use with the Enterprise Virtual Array 3000.

Note: The specifications listed in [Table 2](#) were current at the time of release. Some operating system component versions may change due to revision. For the latest version information, go to: <http://www.hp.com>.

Table 2: Operating System Specifications

Operating System	OS Version	Clustering	HBA (FCA)	Adapter Firmware	Adapter Driver	Secure Path
Windows NT (Intel)	4.0 SP 6a	MSCS	LP8000	ddb382a1 BIOS 1.60a5	4-4.82a9*	4.0a
			FCA2101	rcb382a1 BIOS 1.60a5	4-4.82a9*	4.0a
Windows 2000 (32-bit)	5.0 SP 2, SP 3	MSCS	LP8000	ddb382a1 BIOS 1.60a5	5-4.82a9*	4.0a
			FCA2101	rcb382a1 BIOS 1.60a5	5-4.82a9*	4.0a

Table 2: Operating System Specifications (Continued)

Operating System	OS Version	Clustering	HBA (FCA)	Adapter Firmware	Adapter Driver	Secure Path
Tru64 UNIX	5.1 BL19	TruCluster	LP8000	dd3.81a4	2.02	NR
			FCA2354	cd3.81a4	2.02	
	5.1a BL2****	TruCluster	LP8000	dd3.81a4	2.02	NR
			FCA2354	cd3.81a4	2.02	
	5.1b	TruCluster	LP8000	dd3.81a4	2.02	NR
			FCA2354	cd3.81a4	2.02	
Open VMS	7.2-2w/FIBRE_SCSI-V0200	VMS Cluster	LP8000	dd3.81a4	NR	NR
			FCA2354	cd3.81a4	NR	
	7.3w/FIBRE_SCSI-V0300, 7.3-1	VMS Cluster	LP8000	dd3.81a4	NR	NR
			FCA2354	cd3.81a4	NR	
SUN Solaris	6 (2.6), 7, 8	SunCluster 2.2	JNI 32 bit PCI	3.0.3	2.5.9-03	3.0b
			JNI 64 bit S-bus	13.3.7	2.5.9-03	3.0b
		Veritas Cluster 1.3	FCA2257P	FCode 1.18.5	3.26	3.0b
			FCA2257S	FCode 1.18.3	3.26	3.0b
			FCA2257C	FCode 1.18.5	3.26	3.0b
HP-UX	11.0	MCServiceGuard 11.14	A5158A 1GbPCI	Native	11.00.10	3.0b***
			A6685A 1GbHSC	Native	11.00.10	3.0b***
			A6795A 2GbPCI	Native	11.00.10	3.0b***
HP-UX	11.i (v1.0)	MCServiceGuard 11.14	A5158A 1GbPCI	Native	11.11.09	3.0b*****
			A6685A 1GbHSC	Native	11.11.09	3.0b*****
			A6795A 2GbPCI	Native	11.11.09	3.0b*****
IBM-AIX	4.3.3, 5.1	HACMP4.4	Cambex PCI-1000f	2.01.19	1.5.19.1	2.0c
NetWare	5.1 (SP5)	Clusters 1.01	QLA2340 (FCA2210)	1.29	6.50S	3.0c
	6.0 (SP2)	Clusters 1.06	QLA2340 (FCA2210)	1.29	6.50S	3.0c

Table 2: Operating System Specifications (Continued)

Operating System	OS Version	Clustering	HBA (FCA)	Adapter Firmware	Adapter Driver	Secure Path
Linux	RH 7.2	N/A	FCA2214 (281541-B21)	3.01.09	6.02	3.0
	RHAS	N/A	FCA2214 (281541-B21)	3.01.09	6.02	3.0
	SUSE SLSE7	N/A	FCA2214 (281541-B21)	3.01.09	6.02	3.0

NR — Not required

*X-482a9 is the minimum rev for the HBA driver to work with Secure Path 4.0a, testing however was also done with HBA driver rev X-4.82a13

**Qlogic cPCI 1-Gb adapter is supported only on Solaris 8 for Enterprise Version 2.0.

*** Works with HP-UX HWE (hardware enablement bundle): March 03 HWE
1100B.11.00.0209.5

****NHD-6 is required for boot support with 5.1a

***** Works with HP-UX HWE (hardware enablement bundle): March 03 HWE
11iB.11.00.0209.5

Multipathing Support

OpenVMS and Tru64 UNIX require no additional software for high availability multipathing capability; multipathing is integrated into recent releases of these operating systems.

Windows, Sun Solaris, HP-UX, IBM-AIX, NetWare, and Linux require the installation of HP StorageWorks Secure Path to achieve high availability multipathing capability. Secure Path is licensed on a per-host basis. Each Windows host requires Secure Path for Windows and each Sun Solaris host requires Secure Path for Sun Solaris. See [Table 2](#) for the specific Secure Path versions.

Singlepathing Support Configurations

The following platforms are supported configurations using servers with a single FCA:

- HP-UX
- Windows 2000 and Windows NT
- Sun Solaris
- OpenVMS
- Tru64 UNIX

- Linux
- NetWare

Note: OpenVMS and Tru64 UNIX have built in multipathing features that are not removable, but single pathing is supported.

Note: Single pathing should not be used in mission-critical environments. Please contact your account manager or your local service representative for details on single path configuration.

Supported Disks

Table 3 lists the disks supported by the Enterprise Virtual Array 3000.

Table 3: Disks Supported

Fibre Channel Disk	HP Model	Firmware
10K RPM 36-GB dual-ported	BD03654499	3BE3
15K RPM 36-GB dual-ported	BF03654564	3BE6
10K RPM 72-GB dual-ported	BD07254498	3BE3
15K RPM 72-GB dual-ported	293568-B21	3BE6
10K RPM 146-GB dual-ported	293556-B21	3BE6

Note: Mixing disk types within a disk group is not recommended. Mixing disk types can result in an inefficient use of capacity when using the disk failure protection level option. This option always uses the capacity of the largest disk in the disk group when reserving space for failure protection.

Supported Servers

The following sections list the servers supported by the Enterprise Virtual Array 3000.

Supported Proliant Servers

Table 4 identifies Proliant-series servers that are compatible with the Enterprise Virtual Array 3000.

Table 4: Supported Proliant Servers

Proliant	NT4.0/W2K Single Server Supported	NT4.0/W2K Cluster Supported	NT 4.0 Microsoft HCL Certified*	Windows 2000 Microsoft HCL Certified
DL760	✓	✓	x	✓
DL580	✓	✓	x	✓
DL380	✓	✓	x	✓
DL360	✓	✓	x	✓
ML750	✓	✓	x	Will certify on demand
ML570	✓	✓	x	Will certify on demand
ML530	✓	✓	x	Will certify on demand
ML370	✓	x	x	x
ML350	✓	x	x	Will not be certified
8500	✓	✓	x	Will certify on demand
8000	✓	✓	x	x
7000	✓	x	x	x
6500	✓	x	x	x
6400R	✓	✓	x	x
6000	✓	x	x	x
5500R	✓	x	x	x
3000	✓	x	x	x

Table 4: Supported Proliant Servers (Continued)

Proliant	NT4.0/W2K Single Server Supported	NT4.0/W2K Cluster Supported	NT 4.0 Microsoft HCL Certified*	Windows 2000 Microsoft HCL Certified
1850R	✓	✓	x	x
1600	✓	x	x	x
800	✓	x	x	x

Legend:

✓ - Supported; Certified

x - Not supported; Not certified

* Microsoft will no longer accept submittals for HCL certification on NT 4.0.

Supported Alpha Servers

Table 5 contains those Alpha servers that are compatible with the Enterprise Virtual Array 3000.

Table 5: Alpha Servers Supported

Product	Maximum Number of FCAs/Alpha System			
	Tru 64 UNIX Switch		OpenVMS Switch	
	Single	Cluster	Single	Cluster
AS800	2	2	2	2
AS1200	4	4	4	4
AS4100	4	4	4	4
AS4000	4	4	4	4
AS8200	64	32	26	26
AS8400	64	32	26	26
DS10	2	2	2	2
DS20	4	4	4	4
DS20 E	4	4	4	4
ES40	4	4	4	4
ES45	4	4	4	4
GS60	64	32	26	26

Table 5: Alpha Servers Supported (Continued)

Product	Maximum Number of FCAs/Alpha System			
	Tru 64 UNIX Switch		OpenVMS Switch	
	Single	Cluster	Single	Cluster
GS80	64	32	26	26
GS160	64	32	26	26
GS320	64	32	26	26
GS140	64	32	26	26

Supported Sun Servers

The following list identifies Sun server models that are compatible with the Enterprise Virtual Array 3000.

4U Architecture

- 4500 ■ 3000 ■ R10K ■ 220
- 3500 ■ 450 ■ 420

Sunfire Models

- 4800 ■ 4810 ■ 6800
- 3800 — Uses compact PCI slots. There is a new qualified Fibre Channel Adapter for compact PCI.

Supported HP-UX Servers

The following list identifies HP server models that are compatible with the Enterprise Virtual Array 3000.

A-class	■ 4xx	■ 5xx	■ rp2300	■ rp24xx
B-class	■ B2000	■ B3000		
C-class	■ C3000	■ C3650	■ C3700	
K-class	■ 2XX	■ 3XX	■ 4XX	■ 5XX
K-class (64-bit only)	■ Kx60	■ Kx70	■ Kx80	
L-class	■ 1000 ■ rp5430	■ 2000	■ rp5470	■ rp5450
N-class	■ rp7410	■ rp7400	■ 8400	■ Superdome (16, 32, 64-way)
J-class	■ J5600	■ J6000	■ J6700	

Supported IBM-AIX Servers

The following list identifies IBM server models that are compatible with the Enterprise Virtual Array 3000.

■ P270	■ P610	■ P620
■ F50	■ F80	■ P660
■ H70	■ H80	■ P680
■ S70	■ S7A	■ P690 with restrictions*
■ M80	■ S80	■ P640

*For restrictions, see the *HP StorageWorks Release Notes for IBM AIX Kit V2.0 for Enterprise Virtual Array 3000*.

Documentation Updates

This section contains corrections and additions to the Enterprise Virtual Array 3000 documentation, particularly the *HP StorageWorks Enterprise Virtual Array 3000 User Guide*.

Minimum Required VCS Code Version is v2.004

The minimum required VCS code version required for the EVA3000 is v2.004. The following documentation incorrectly identifies the minimum required version as v2003:

- *HP StorageWorks Enterprise Virtual Array 3000 Read Me First*
- *HP StorageWorks System Software for Enterprise Virtual Array 3000 Installation Instructions*
- *HP StorageWorks Command View EVA Software Installation Card*
- *HP StorageWorks Command View EVA Release Notes*

Snapshot is Now Business Copy EVA

The snapshot features of the EVA3000 are now included in HP StorageWorks Business Copy EVA. The license for the snapshot features is now titled Business Copy EVA. The snapshot functionality and licensing process has not changed—only the product name is different.

Regulatory Notices

The following should be included with the regulatory information in Appendix A of the *HP StorageWorks Enterprise Virtual Array 3000 User Guide*.

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that

may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows the classification (A or B) of the equipment. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC logo or FCC ID on the label. After the Class of the device is determined, refer to the corresponding statement in the following sections.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected
- Consult the dealer or an experienced radio or television technician for help

Declaration of Conformity for Products Marked with the FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, refer to <http://thenew.hp.com>:

For questions regarding this FCC declaration, contact:

- Hewlett-Packard Company
Product Regulations Manager
3000 Hanover St.
Palo Alto, CA 94304
- Or call 1-650-857-1501

To identify this product, refer to the part, series, or model number found on the product.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Laser Device

All Hewlett-Packard systems equipped with a laser device comply with safety standards, including International Electrotechnical Commission (IEC) 825. With specific regard to the laser, the equipment complies with laser product performance standards set by government agencies as a Class 1 laser product. The product does not emit hazardous light; the beam is totally enclosed during all modes of customer operation and maintenance.

Laser Safety Warnings

Heed the following Warning:



WARNING: To reduce the risk of exposure to hazardous radiation:

- Do not try to open the laser device enclosure. There are no user-serviceable components inside.
 - Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.
 - Allow only HP authorized service technicians to repair the laser device.
-

Compliance with CDRH Regulations

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States.

Certification and Classification Information

This product contains a laser internal to the Optical Link Module (OLM) for connection to the Fibre communications port.

In the USA, the OLM is certified as a Class 1 laser product conforming to the requirements contained in the Department of Health and Human Services (DHHS) regulation 21 CFR, Subchapter J. The certification is indicated by a label on the plastic OLM housing.

Outside the USA, the OLM is certified as a Class 1 laser product conforming to the requirements contained in IEC 825-1:1993 and EN 60825-1:1994, including Amendment 11:1996.

The OLM includes the following certifications:

- UL Recognized Component (USA)
- CSA Certified Component (Canada)
- TUV Certified Component (European Union)
- CB Certificate (Worldwide)

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (the equivalent international standards are in parenthesis):

- EN55022 (CISPR 22) - Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- EN60950 (IEC950) - Product Safety

Notice for France

DECLARATION D'INSTALLATION ET DE MISE EN EXPLOITATION d'un matériel de traitement de l'information (ATI), classé A en fonction des niveaux de perturbations radioélectriques émis, définis dans la norme européenne EN 55022 concernant la Compatibilité Electromagnétique.

Germany Noise Declaration

Schalldruckpegel $L_p = 70 \text{ dB(A)}$
Am Arbeitsplatz (operator position)
Normaler Betrieb (normal operation)
Nach ISO 7779:1999 (Typprüfung)

Japanese Notice

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Harmonics Conformance (Japan)

高調波ガイドライン適合品

Taiwanese Notice

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