release notes

hp StorageWorks DS-KGPSA-CA/CX and FCA2354 PCI host bus adapters

for Tru64 UNIX and Open VMS

Fourth Edition (August 2003)

Part Number: AA–RR6YD–TE

These release notes contain supplemental information for the HP StorageWorks DS-KGPSA-CA/CX and FCA2354 Host Bus Adapters for Tru64 UNIX and OpenVMS.

For the latest version of these Release Notes and other HBA documentation, access the HP storage website at: http://www.hp.com/country/us/eng/prodserv/storage.html.

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Release Notes Information

The DS-KGPSA-CA/CX and FCA2354 Host Bus Adapters (HBAs) are high-performance PCI option modules that connect to devices attached through either a hub-based optical Fibre Channel arbitrated loop or a switch based optical Fibre Channel fabric. These HBAs support short-wave laser multi-mode connections. These release notes include known issues or restrictions for using the HBA within a system configuration. These release notes cover the following major topics:

These Release Notes cover the following major topics:

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Other Documentation

The FCA2354 Host Bus Adapter documentation also includes the *Compaq StorageWorks Tru64 UNIX and OpenVMS FCA-2354 Host Bus Adapter Installation Guide*, part number AA-RR6XA-TE.

Additional documentation, including white papers and best practices documents, are available via the HP website at:

http://h18000.www1.hp.com/storage/saninfrastructure.html

Supported Systems

Table 1 describes the Alpha server platforms with the associated number of adapters that are supported per operating system configuration for the DS-KGPSA-CA/CX.

Table 1: Supported Alpha Server Platforms for the DS-KGPSA-CA/CX

	Tru64 Unix				OpenVMS[1]	
	FC-AL		Switch		Switch	
ALPHA SERVER	SINGLE	CLUSTER	SINGLE	CLUSTER	SINGLE	CLUSTER
ES40	1	2	4	4	4	4
DS20	1	2	4	4	4	4
DS20E	1	2	4	4	4	4
DS10	1	2	2	2	2	2
AS800	N/S	N/S	2	2	2	2
AS1200	N/S	N/S	4	4	4	4
AS4000 AS4100	N/S	N/S	4	4	4	4
AS8200 AS8400	N/S	N/S	64	64	26	26
GS60/160/320	N/S	N/S	64	64	26	26
GS80/140 EV6 EV6/7	N/S	N/S	64	64	26	26
ES45	N/S	N/S	4	4	4	4

1. TIMA kit is required. See OpenVMS Restrictions section in this document for version information.

Table 2 describes the Alpha server platforms with the associated number of adapters that are supported per operating system configuration for the FCA2354.

Note: The minimum console revision for all platforms is Version 6.1.

Table 2: Supported Alpha Server Platforms for FCA2354

	Tru64 UNIX		OpenVMS[1]	
	Switch		Switch	
ALPHA SERVER	SINGLE	CLUSTER	SINGLE	CLUSTER
ES40	6	6	6	6
ES45	6	6	6	6
DS20E	4	4	4	4
DS10	2	2	2	2
GS80/160/320	62	62	26	26
D525	4	4	4	4
ES80	24	24	24	24
ES1280	32	32	32	32
ES47	24	24	24	24

1. TIMA kit is required. Refer to the OpenVMS Restrictions section in this document for version information.

Supported Firmware and Drivers

Table 3 and Table 4 list components and operating systems that have passed compatibility testing with the HBAs as of the date on these release notes. Refer to the Restrictions section in these release notes for known operating system and device restrictions.

Table 3: Supported Storage and Interconnect Devices for the DS-KGPSA-CA/CX

Component	Firmware/Driver Version	Part Number
DS-KGPSA-CA/CX	DD391A1.awc	Resides on the HBA
Unix Driver 4.0F	1.21	PK7 (BL18)
Unix Driver 4.0G	1.22	PK3 (BL17)
Unix Driver 5.0A	1.22	PK3 (BL17)
Unix Driver 5.1	1.25	PK7 (BL18)
VMS Driver 7.2-1, 7.2-2, 7.3, 7.3-1	7.2-1, 7.2-2, 7.3, 7.3-1	PK6 (BL20)
VMS TIMA KIT	dec-axpvms-vms721_fibre_scsi-v0400--4.pcsi-dcx_axpexe You must install the following remedial kits before installing this, or any other required kit:	
	VMS7.21: ■ VMS721_PCSI_V0100 ■ VMS721_UPDATE_V0100 ■ VMS721_SYS_V0900	
	VMS7.21-2: ■ VMS722_FIBRE_SCSI_V0400 ■ VMS722_UPDATE_V0100	
	VMS7.3: ■ VMS73_FIBRE_SCSI_V0400 ■ VMS73_UPDATE_V0100	
	VMS7.3-1: ■ VMS731_UPDATE_V0100	

Table 4: Supported Storage and Interconnect Devices for the FCA2354

Component	Firmware/Driver Version	Part Number
FCA2354	CD391A1.awc	Resides on the HBA
Unix Driver 5.1	2.02	Patch Kit 6
Unix Driver 5.1A	2.06	Patch Kit 4
Unix Driver 5.1B	2.07	
VMS Driver 7.2-2, 7.3, 7.3-1	7.2-2, 7.3, 7.3-1	NA
VMS TIMA KIT	N/A	N/A

Configuration Information

Refer to the *HP StorageWorks SAN Design Reference Guide*, for the following configuration information:

- Supported fibre channel switches and their configurations
- Supported mixed HBAs in the same host

This document is available on the HP website at:

http://h18006.www1.hp.com/products/storageworks/san/documentation.html.

Restrictions

This section contains the restrictions for the DS-KGPSA-CA/CX and FCA2354 HBAs and for each of the operating systems on which the HBAs can be installed.

DS-KGPSA-CA/CX Restrictions

- The minimum firmware revision of DS-KGPSA-CA/CX for Alpha platforms all Operating Systems is DD391A1.awc.
- The minimum Revision of the KGPSA-CA/CX adapter hardware is FC1020016-02 Rev B.
- The maximum length of the OPTICAL cable from the DS-KGPSA-CA/CX to a hub or switch is 500 meters short wave multi mode 50/125 micron Fibre Channel Cable.

FCA2354 Restrictions

- The minimum hardware revision of FCA2354 is FC1010472-01 Revision A.
- The minimum firmware revision of FCA2354 for Alpha platforms all Operating Systems is CD391A1.awc.
- The Maximum length of the OPTICAL cable from the FCA2354 adapter to a hub or switch is 500 meters short wave multi mode 50/125 micron Fibre Channel Cable.

Tru64 UNIX Restrictions

Tru64 UNIX restrictions include:

- The DS-KGPSA-BC and FCA2354 drivers for Tru64 UNIX are built into the operating system.
- Tru64 UNIX V4.0x does not support the installation of the Operating System on an RA8000, ESA12000, or MA6000.
- Tru64 UNIX 4.0F, BL13, NHD2 or greater supports adapters in Fibre Channel switch topologies and in Fibre Channel Arbitrated Loop topologies. Both KGPSA-BC and KGPSA-CA/CX are supported.

Refer to http://h30097.www3.hp.com/support.html for updates.

OpenVMS Restrictions

OpenVMS restrictions include:

- The DS-KGPSA-BC and DS-KGPSA-CA/CX drivers for OpenVMS are built into the operating system. The minimum revisions of the operating system for the DS-KGPSA-CA/CX are V7.2-2 and V7.3.
- The FCA2354 driver for OpenVMS is built into the operating system. The minimum revisions of the operating system for the FCA2354 HBA are:
  - V7.3-1 for ES47, ES80, and GS1280
  - V7.3 for ES45
- OpenVMS supports DS-KGPSA-BC, DS-KGPSA-CA/CX, FCA2354, and FCA2384 adapters in Fibre Channel switch topologies.
- The latest TIMA kits for the HBA driver are:
  - DEC-AXPVMS-VMS722_FIBRE_SCSI_V0400.PCSI for OVMS 7.2-2
  - DEC-AXPVMS-VMS73_FIBRE_SCSI_V0500.PCSI for OVMS 7.3
  - DEC-AXPVMS-VMS731_FIBRE_SCSI_V0100.PCSI for OVMS 7.3-1
- DS-KGPSA-BC or DS-KGPSA-CA/CX-specific restrictions:
  - OpenVMS does not support the operation of the S3Trio video board and the DS-KGPSA-BC or DS-KGPSA-CA/CX adapter in the same PCI bus.
  - For large system configurations (many DS-KGPSA-CA/CX/devices and paths) the VMS install CD does not boot. It hangs if no DS-KGPSA-CA/CX are in the system; or it crashes (either INCONSTATE or IOMACHINECHK) if a DS-KGPSA-CA/CX is installed in the system. The workaround is to perform a conversational boot (boot -fl 0,1) of the CD and at the sysboot prompt to increase the SYSGEN value of NPAGEVIR. The recommendation is to initially double the CD default of 8,388,608 Bytes.
  - Rarely, on boots and reboots, an HBA's port does not come on line. The workaround is to unplug and then replug the HBA's cable. Then run MC SYSMAN IO AUTO/LOG to bring the port on line. Using the SHOW DEV DG/MULTIPATH command is a quick way to determine if all of the paths are there after a boot. OpenVMS plans to provide a TIMA kit to solve this problem.

Refer to the web site http://ftp1.service.digital.com/public/vms/axp/ for updates.

Troubleshooting

Use the following tips to troubleshoot HBA related problems:

- The driver revision and the HBA firmware revision are critical. Make sure both have the correct versions installed.
- Read the ASCII error message from the driver and investigate based on that information.
- Check for the Fibre Channel addresses appearing and disappearing without reason, or other conditions that affect part of or the entire Fibre Channel network. Check the fabric configuration including:
  - — Check the switches for port errors or other switch problems such as setup, or firmware level.
  - — Cabling problems
  - — Possible bad HBA
- Look for adapter error bits set in the HBA's registers. The driver resets the adapter after each internal error. If internal HBA device errors appear repeatedly, this could indicate that the HBA module should be replaced.