

# *Compaq Storageworks™*

## **HSJ80 Array Controller ACS Version 8.5J-2 Release Notes**

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*This document summarizes features and characteristics of the HSJ80 Array Controller ACS Version 8.5J-2, the CIXCD Firmware upgrade, and the SWCC Client V2.3 that are not covered elsewhere in the documentation.*

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Second Edition (August 2000)  
Part Number: EK-HSJAA-RA. B01  
**Compaq Computer Corporation**

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Release Notes HSJ80 Array Controller ACS Version 8.5J-2  
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## Contents

These release notes cover the following topics:

Rolling Upgrade Feature, page 3

Audience, page 4

Hardware and Software Compatibility, page 4

Tape Support, page 4

Clarifications of Use, page 5

Operating Constraints, page 6

Documentation Additions and Corrections, page 9

Four Star-Coupler Configuration, page 10

StorageWorks Command Console Release Notes, page 11

CIXCD Host Adapter Firmware Release Notes, page 13

## Rolling Upgrade Feature

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**IMPORTANT:** If preferred pathing is enabled, you must disable it before initiating the rolling upgrade. If you are going to use the rolling upgrade feature from Version 8.5J, Version 8.5J-1, or S8AJ to Version 8.5J-2, you must read and follow the procedure on pages 2-12 through 2-14 in the *Compaq StorageWorks HSJ80 Array Controller Version 8.5J-2 Maintenance and Service Guide*, EK-J80MS-SA. A01.

After you perform the rolling upgrade, you may get the following message:

```
An improper software- upgrade has been performed; the cache module has
metadata incompatible with- this software. Restore previous software and
follow proper upgrade procedure or- type:
CLEAR THIS INVALID_CACHE DESTROY_UNFLUSHED_DATA
```

Clear the invalid cache by issuing the command above and continue the upgrade.

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## Audience

This document has been prepared for customers who have purchased the Compaq StorageWorks HSJ80 Array Controller and for Compaq services staff responsible for installing, configuring, and maintaining systems that include the HSJ80 Array Controller subsystem.

## Identifying Your Array Controller Software Revision Level

The Array Controller Software Kit you received includes the Software Product Description (AE-RKVDB-TE), the Warranty, and the PCMCIA program card containing the new Array Controller Software (ACS).

You can identify your current software revision level by entering the `SHOW this_controller` command at the Command Line Interpreter (CLI) prompt using the CLI window from the StorageWorks Command Console (SWCC), a maintenance terminal, or by way of a Diagnostic and Utility Program (DUP) connection to a host terminal.

The resulting display lists the software level that is currently installed. When you have completed the installation process for the new version ACS software, you should see the following displayed: V85J-2

If the ACS version is not V85J-2 after installation of the new PCMCIA program card, contact your support provider for instructions on how to obtain the updated version.

## Hardware and Software Compatibility

The hardware and operating system software that supports the use of the HSJ80 Array Controller ACS Version 8.5J-2 is specified in the *Compaq StorageWorks HSJ80 Array Controller ACS Version 8.5J-2 Software Product Description* (AE-RKVDB-TE) that accompanies the PCMCIA program card.

SWCC V2.3 using the HSJ80 StorageWindow V2.2 supports the HSJ80 ACS Version 8.5J-2 software.

## Tape Support

The HSJ80 Array Controller ACS Version 8.5J-2 contains support for tape drives and tape libraries. This new feature is described in the *Compaq StorageWorks HSJ80 Array Controller ACS Version 8.5J-2 Software Product Description* (AE-RKVDB-TE) shipped with the PCMCIA program card.

## Clarifications of Use

Table 1 provides clarifications of key aspects of controller operations.

Table 1 Clarifications of Use	
Subject	Clarification
CLI Command Set Remote Disk Copy Data	Enabling this switch allows additional communications to occur between controllers. These features are not currently supported. Enabling remote disk copy causes the HSJ80 to form virtual circuits with other controllers. This may cause HSJ40s and HSJ50s to malfunction due to an incorrect MAX_HOST count. <i>Do not enable remote disk copy data.</i>
SWCC use with the HSJ80 Array Controller	The StorageWorks Command Console must be upgraded to the version supplied on the software CD-ROM if it is to be used with the HSJ80 Array Controller subsystem.
Upgrading an HSJ40 or HSJ50 to an HSJ80 Array Controller Subsystem	If an HSJ40 or an HSJ50 subsystem is upgraded to an HSJ80, there can be no reversal; the original HSJ40 or HSJ50 subsystem cannot be reinstalled and configured. Drives can be moved from an HSJ40 or HSJ50 upward to an HSJ80. You cannot, however, initialize a drive on an HSJ80 and then physically move that drive to a system with an HSJ40 or HSJ50, configure, and mount the drive without reinitializing it. (The metadata stored on the disk drives is different and incompatible between the HSJ40/HSJ50 and the HSJ80. During the upgrade procedure from an HSJ40 or HSJ50 to an HSJ80, the device metadata is updated. This makes the drive unusable on the older controller. To use these drives on an HSJ40 or HSJ50, they must be initialized on that controller.)
CIXCD host adapter use with the HSJ80	If 4 KB packet data transfers are to be used with the HSJ80 Array Controller subsystem, then CIXCD Host Adapters on the same cluster as the HSJ80 must be upgraded to a new firmware level. This firmware upgrade is supplied on the software solution kit CD-ROM (with the SWCC upgrade).
Largest capacity disk drive supported with the HSJ80 controller	The largest capacity disk drive that may be used with the current version of the HSJ80 software is 72 GB.
Partition limit	There may be no more than eight partitions on a single JBOD or on any storageset.
Moving disks between different storage set types	When moving disks from one storage set type to another, the disk must be initialized prior to being added to the new storage set. For example, if DISK10100 is currently a member of a mirror set and it is going to be moved to a RAID set, then DISK10100 must be initialized <i>before</i> being placed into the RAID set.

Table 1 Clarifications of Use <i>(continued)</i>	
Subject	Clarification
DILX and passthrough devices	DILX in automatic mode allocates and attempts to test passthrough devices. This generates various errors from the passthrough device. Either delete all passthrough devices before running DILX in automatic mode or manually select which units to test, being careful not to select passthrough devices.
TILX restriction	Do not exercise TSZ20 tapes using TILX. The TSZ20 may not function as expected by TILX and will cause the test to fail.

## Operating Constraints

An operating constraint is a limitation placed on the operation of the controller by the nature of its design. Keep these constraints in mind to avoid problems and to help achieve the maximum performance from your controller.

## Multi-Cluster Configurations



**CAUTION:** When using the multi-cluster mode of operation, the port access of the controllers and the logical units must be set correctly or data loss may occur. See the following description for additional information.

### Problem Description

An H5J80 Array Controller storage subsystem may be used in a multiple-cluster configuration using dual Star Couplers and both host ports on both controllers cabled in a dual-redundant configuration (see Figure 1).

Multiple cluster configurations should be configured with caution as data stored on a disk with one cluster may be read and written by the other cluster if not configured properly.

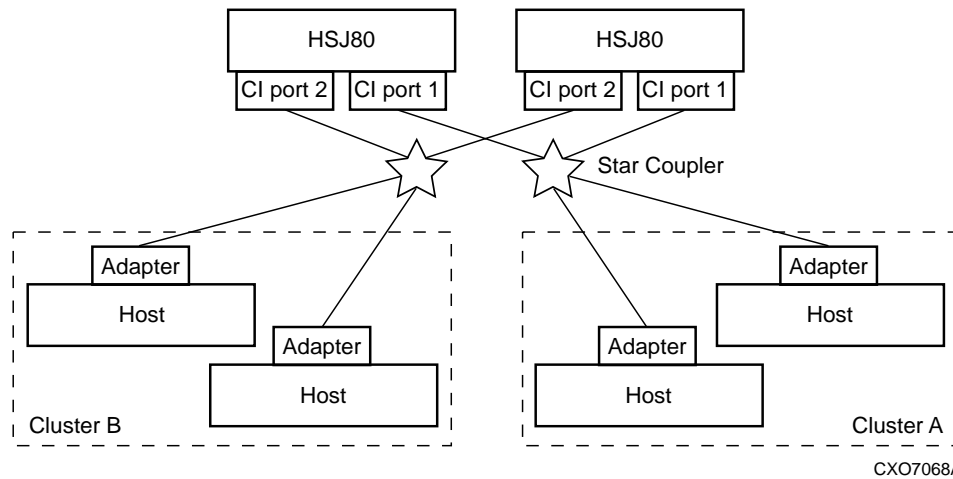


Figure 1. Dual Controller, Multiple Cluster Configuration

### Problem Resolution

To avoid the problem, you need to:

- Select the units to be used with a particular cluster
- Enter a series of CLI commands for each container in the subsystem to make them accessible by only one cluster.

The SET *unit\_number* THIS\_PORT\_1\_ACCESS=FULL/NONE CLI command assigns specific storage units for access by only one of the two clusters. Each container in the subsystem must be set up in the manner described in the next section.

### **Example of CLI Commands**

The following examples of command syntax shows the setting of the access to port 1 to full on both “this controller” and “other controller” for container D100. This is followed by the syntax to turn on the access to port 2 to full on both “this controller” and “other controller” for container D200:

```
Set D100 THIS_PORT_1_ACCESS=FULL
Set D100 THIS_PORT_2_ACCESS=NONE
Set D100 OTHER_PORT_1_ACCESS=FULL
Set D100 OTHER_PORT_2_ACCESS=NONE

Set D200 THIS_PORT_2_ACCESS=FULL
Set D200 THIS_PORT_1_ACCESS=NONE
Set D200 OTHER_PORT_2_ACCESS=FULL
Set D200 OTHER_PORT_1_ACCESS=NONE
```

These CLI Commands result in cluster A having full access to D100, but D100 is not available to cluster B. Conversely, cluster B has full access to D200, but D200 is not available to cluster A.

### **AlphaServers or GlobalServers (GS60/140/60E) using DWLPB Adapters**

The DWLPB-xx hardware option must be at revision F or better before adding HSJ80 Array Controllers to the cluster. The part number is 54-24721-01 rev D.

Contact your field service representative for more information.



## Documentation Additions and Corrections

This section records changes to the HSJ80 Array Controller documentation.

### HSJ80 Array Controller ACS Version 8.5J-2 Installation and Configuration Guide

Add the following new section after the existing section titled “Adding Devices” on page 5-15.

#### Changing Physical Disk Operating Parameters

If you select a **Spare** or **Available** device from the device grid, the Physical Device Properties dialog box General tab, similar to that shown in Figure 2, shows a state of either **Good**, **Spare**, **Available**, **Reconstructing**, or **Failed**, as appropriate.

A legend that shows the meaning of the Command Console icons is shown in Figure 5-33 on page 5-32 of the *HSJ80 Array Controller ACS Version 8.5J-2 Installation and Configuration Guide*.



Figure 2. Physical Device Properties General Tab

## Four Star-Coupler Configuration

This configuration, illustrated in Figure 3, is a special case. It is documented at the request of customers and shows that each port can be connected to a separate star coupler.

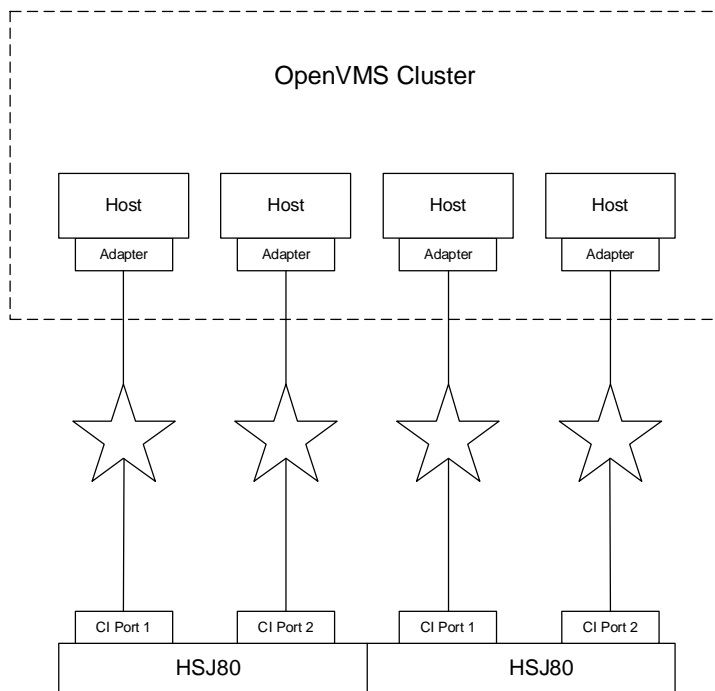


Figure 3. Four Star-Coupler Configuration

## StorageWorks Command Console Release Notes

The StorageWorks Command Console (SWCC) is a feature-rich graphical user interface (GUI) for StorageWorks Array Controllers. This section describes the SWCC for the HSJ80 Client and Agent program modules.

The SWCC Client for the HSJ80 is a graphical user interface that is used along with its accompanying Agent software. The combination of the two allows the user to configure and monitor the HSJ80 controller and storage. Its function is similar to that of the HSJ30, HSJ40, and HSJ50 Storage Window but has new features:

- Two independent CI Host Bus Ports
- Mirrored write-back cache
- Ability to assign unit access to a specific host port
- Support for code load
- HSJ30, HSJ40, and HSJ50 configuration can be saved and restored to an HSJ80

### Application Notes

There is a set of SWCC Application Notes (EK-HSJAN-AA. B01) located on the CD-ROM. These notes are in a TXT file format and provide tips that facilitate use of the Command Console.

### Identifying Your Command Console Software Revision Level

You can identify your version of Client software by accessing the Help>About menu in any window type. The resulting display should list the current software revision level as “Version 2.3” or “V2.3.”

### Minimum System Configuration

The client requires the minimum system configuration, shown in Table 2, to operate.

**Table 2 Client Minimum System Configuration Requirements**

Feature	Requirement
Architecture	x86-compatible CPU, 66 MHz, 16 MB memory, 1 MB free disk space, or Microsoft Windows NT-compatible Alpha CPU-based host system (1 MB free disk space)
Operating System	Microsoft Windows NT or Windows 2000
Monitor	15" VGA
Input devices	Keyboard, mouse
Modem	Hayes-compatible
Serial port (for connection via serial port only)	Standard, PC serial port capable of at least 9600 baud.
Network adapter (for connection via network only)	TCP/IP-compatible network card
Controller compatibility	StorageWorks HSJ80 controller

## Client Operating Clarifications

### Patches Required on OpenVMS 6.2

When running OpenVMS V6.2 (any version), three patches must be installed to avoid problems with the OpenVMS `pthread_delay_np()` function. If the patches are not installed, then problems could occur with the delays not being taken when they should. Code load failures and lock time-outs occur when this problem is encountered. The three patches must be installed in the following order:

1. VAXCLUSIO01\_062
2. VAXY2K02\_062
3. VAXLIBr03\_062

## **CIXCD Host Adapter Firmware Release Notes**

The CIXCD host bus-adapter for all Alpha CPU and VAX CPU hosts running the XMI bus, has a new revision of its firmware available. The CIXCD firmware (CIXCD\_4K) is identical to the standard CIXCD firmware except that the maximum packet size has been increased to 4 KB. This increase allows the HSJ80 to run 4 KB packet data transfers. If 4 KB data transfer packets are desired in your configuration, then you must install this new firmware revision into all CIXCD host bus adapters in the cluster.

### **CI Interconnect Support**

The CIXCD\_4K firmware is supported using standard Computer Interconnect (CI) configuration rules. The following standard CI node count restrictions also apply to all CIXCDs running CIXCD\_4K:

- Less than or equal to 16 CI host systems
- Less than or equal to 16 CI Hierarchical Storage Controllers
- Less than or equal to 32 CI products or Star Coupler - 16 without the addition of a Computer Interconnect Star Coupler Extender (CISCE)
- Less than or equal to 96 VMS Cluster member systems

### **CI Hierarchal Storage Controller Support**

HSJxx and all HSCxx (except HSC50).

### **CI Host Adapter Support**

CIPCA, CIXCD

