Software Product Description

Product Name: StorageWorks Command Console V2.1   **SPD 64.64.06**

Description

Command Console is a feature-rich, graphical user interface (GUI) providing local and remote management of StorageWorks[TM] controllers. It is a user-friendly tool for monitoring, configuring, and troubleshooting storage subsystems.

Command Console can be connected to your StorageWorks controller in several ways. Once connected, the program issues commands and interprets the responses sent by the controller. The user interface displays the logical and physical layout and status of a selected subsystem in graphical form.

Command Console consists of two major components: the Client and the Agent. The Client, which includes the user interface and some additional services, provides a window into your storage subsystems. The Agent is a host-resident program that is an interface between the Client and the host's storage controller to interpret and transfer information.

This product is Year 2000 Ready. "Year 2000 Ready" products are defined by Compaq as products capable of accurately processing, providing, and/or receiving date data from, into and between the twentieth and the twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the associated product documentation and provided that all hardware, firmware and software used in combination with such products properly exchange accurate date data with the products.

For additional information visit the DIGITAL Brand area on Compaq's Year 2000 Ready web site located at http://www.compaq.com/year2000/.

This SPD applies to the StorageWorks Command Console Management Station V2.1 and the following SWCC components:

Client	Agent
SWCC Client for HS Series V2.1 SWCC Client for HSG80 V2.1a SWCC Client for HSJ V2.0 SWCC Client for HSD V2.0	SWCC Agent for HS Series V2.1
SWCC Client for Fibre Channel SAN Interconnect V2.5	SWCC Agent for Fibre Channel SAN Interconnect V2.5

SWCC Client for HSZ22 V2.0	SWCC Client for HSZ22 V2.0
SWCC Client for RA200 V2.1	SWCC Agent for RA200 V2.2 and V2.1
SWCC Client for Device Management V2.0	SWCC Agent for Device Management V2.0

Features

The major features of the Command Console are:

* Easy, graphical configuration of the storage system using an interface similar to Windows Explorer®.
* Graphical view of the controller and its physical and logical storage elements.
* Status monitoring of the storage subsystem using intuitive icons.
* Fault notification by pager, electronic mail, and event log entries.
* Management of multiple host systems through a TCP/IP network connection.
* Direct serial port connection.
* Direct SCSI port connection
* Robust security that prevents unauthorized access to configuration capabilities.

Command Console Agent

The Agent acts as the Client's assistant in controlling your storage subsystem. The Agent continuously monitors the subsystem and notifies the Client of changes.

Commands sent from the Client are received by the Agent and are routed to the storage subsystem via the subsystem's SCSI host bus. Subsystem status is transmitted back to the Client from the Agent via the network connection.

The Agent also authenticates clients based on the operation being performed to the subsystem. In addition, the Agent can also inform the user of changes via SNMP and electronic mail (on UNIX® and OpenVMS platforms).

On the OpenVMS platform, the Agent supports Digital's TCP/IP Services for OpenVMS, and Process Software's MultiNet and TCPware products.

RAID Support

Command Console provides graphical configuration support for the following RAID configurations:

* RAID 0 - disk striping
* RAID 1 - disk mirroring
* RAID 0+1 - striped mirroring
* RAID 3/5 - striped parity
* JBOD

Connection Options

You can connect the Command Console client to your storage subsystem in three ways:
Network Connection - Command Console Client can connect to a maximum of 128 Agents via a TCP/IP network connection. From the Client, you can manage the agents on multiple host platforms.

Direct Serial Port Connection - Command Console Client can also be connected to the subsystem via a direct, cable connection (RS232) from the PC to the subsystem controller's serial maintenance port, where available. No Agent is required for this configuration.

Host-Bus SCSI Connection - You can run the Command Console Client on Windows NT host systems and manage the storage subsystem using the host SCSI bus, where applicable.

Controller Compatibility
The Command Console supports the following RAID controllers:

- **HSZ20, HSZ40, HSZ50, HSZ70, HSZ80**
- **HSJ30, HSJ40, HSJ50, HSD30, and HSD50**
- **KZPAC and KZPSC**
- **HSZ22**
- **HSG80**

Command Console Scalability
You can connect concurrently to up to 128 host systems, each with up to 32 storage subsystems for a maximum of up to 4096 concurrent subsystem connections and a total of 2.65PB of storage.

Using a network connection, you can configure and monitor your storage subsystem from anywhere on your LAN. If your LAN has WAN or Internet connectivity, you can monitor your subsystem with TCP/IP network reliability from anywhere in the world.

Error Handling
Command Console provides pass-through error information for all types of controller problems. If the Client runs on a Windows NT™ system, the program makes full use of the Windows NT event logging facility. The Agent can issue errors without an active Client. The errors can be directed to the syslog facility or a pager, can be mailed to specific users, or can use the standard SNMP asynchronous notification.

Pager Fault Notification
Command Console offers the capability to notify multiple alphanumeric or numeric pagers, in user-specified shifts, when a subsystem faults. Pager information consists of both subsystem identification and fault category codes. The application event service must be running on the Client in order for pager notification to be received.

Command Console Security
A client has three levels of security access for communicating with the storage subsystem. The user configures the privilege levels within the Agent.

- Overall status - Monitor event changes with notification
- Detailed Status - View event changes with the GUI
- Configuration - Allow configuration of the subsystem(s) and above features noted.

SCSI Device Management Support
Command Console provides SCSI device management support by monitoring the storage devices connected to SCSI adapters. The Device Management Storage Window displays the status of the adapter and the devices attached to it. In addition, you can update device firmware and view mode page information, as well as static information such as vendor ID, product ID, and device type and capacity. The Device Management Agent is not supported for use in cluster configurations.

Fibre Channel Fabric Support
Command Console provides configuration and monitoring support for fibre channel fabrics consisting of switches, hubs and fibre channel tape controllers using the Command Console Fabric Window or the Command Console Fabric Page.

The Fabric Window allows you to configure fibre channel fabrics, add and delete switch, hub and fibre channel tape controller elements to a fabric and display status information about the fabrics via a Windows interface. In addition, you can drill down to configure and monitor a fibre channel switch, hub or fibre channel tape controller in the fabric. You can configure the switch and fibre channel tape controller, including its port and network requirements. In addition, you can upgrade switch firmware and display performance information.

The Fabric Page also allows you to configure fibre channel fabrics, add and delete switch, hub and fibre channel tape controller elements and display status information about the fabrics via a web interface. In addition, you can drill down to configure and monitor a fibre channel switch or fibre channel tape controller in the fabric. The Fabric Page does not support monitoring or configuring the hub.

Minimum System Requirements

Following are the minimum system requirements for Command Console Client:

Operating system	Windows NT V4.0 SP3 and SP4, or Windows 95a, Windows 95 OSR2, Windows 98 on Intel. Windows NT V4.0 SP3 on Alpha.		controllers
		Network adapter	TCP/IP-compatible network card (required for network connection only)
Disk space	All programs and files 25 – 32 MB, depending on platform	**Pagers**	Alphanumeric pagers: PageNet® and MobileComm®. Numeric pagers: Any that support input of a numeric message followed by a pound (#) sign, including those that implement PINs. Required for paging only.
Monitor	VGA		
Input devices	Keyboard, mouse		
SCSI adapter	Fast Wide Differential(FWD)		
Modem	Hayes-compatible (required for paging only)		
Serial Port	For connection via serial port only for HSZ		

The following table describes the operating system platforms and versions supported by the Command Console Controller Agents.

Controller	Operating System	Version
HSZ20	Windows NT Alpha	4.0 SP3
HSZ40	Windows NT Intel	4.0 SP3, SP4
HSZ50	Digital UNIX	4.0b-d, 4.0e
HSZ70	OpenVMS Alpha	6.2-1H3 and 7.1-1H1
	HP-UX	10.2 and 11.0
	IBM AIX	4.2 and 4.3
	Sun Solaris	2.5.1 and 2.6
	Silicon Graphics IRIX	6.2 and 6.4
HSJ30	OpenVMS Alpha	6.2-1H3 and 7.1-1H1
HSJ40	OpenVMS VAX	6.2 and 7.1
HSJ50		
HSD30		
HSD50		
KZPSC	Windows NT Alpha	4.0 SP3

KZPAC	Windows NT Intel	4.0 SP3, SP4
	Digital UNIX	3.2g and 4.0b-d, 4.0e, V5.0
	OpenVMS Alpha	6.2-1H3, 7.1-1H1, 7.1-2

HSG80	Windows NT Alpha	4.0 SP3, SP4
	Window NT Intel	4.0 SP4
	Sun Solaris	2.5.1, 2.6, 2.7
	Silicon Graphics IRIX	6.4.1 and 6.5.3
	HP-UX	11.0.1
	OpenVMS Alpha	7.1
	Tru64 UNIX	V4.0f

HSZ80	Tru64 UNIX	4.0f
	OpenVMS	7.1
	IBM AIX	4.2 and 4.3

HSZ22	Windows NT Intel/Alpha	4.0 SP3
	Digital UNIX	4.0d
	OpenVMS	7.1-1H1
	Sun Solaris	2.5.1 and 2.6
	HP-UX	10.2, 11.0
	IBM AIX	4.1.5, 4.2 and 4.3
	Novell Netware	4.1

Command Console also supports the above controllers in certain RAID Array solutions. See the Software Product Description included with the Solution Platform Kit for more information.

Command Console supports the above HS*** controllers with the appropriate Array Controller Operating Software. The Command Console CD-ROM includes the KZPSC/KZPAC backplane RAID controller's firmware V2.49, which is required for use with the RA200 agent. The HSZ22 agent is supported with the firmware that's shipped with the RA3000 platform kit.

Enclosure Hardware Compatibility
Command Console provides specific, graphical representations for the StorageWorks enclosures supported by the controller. For example, Command Console displays representations of a 7-device, single controller Configuration a 14-device, dual controller configuration, and more for the HSZ22 controller.

SCSI Device and Adapter Compatibility
Command Console's Device Management Storage Window and Agent support SCSI-2 devices that reside in supported configurations. Firmware loading is supported for the following disk devices:

- RZ28L
- RZ29L
- RZ40
- RZ1BB
- RZ1CB
- RZ1DB
- RZ1EF

Command Console supports the following adapters for use with the Device Management Storage Window and Agent. Note that the Agent runs on Windows NT V4.0 systems and Compaq's Digital UNIX V4.0b and V4.0d systems only.

Windows NT and Digital UNIX on Alpha
- KZPSA-BB

Windows NT on Intel systems
- KZPBA-CA

- KZPAA-AA
- KZPBA-CA (single ended)
- KZPBA-CB (differential)
- Adaptec AHA-2944 Ultra Wide PCI-to-Ultra differential SCSI host adapter (Windows NT only)

- KZPBA-CB
- Adaptec AHA-2944 Ultra Wide PCI-to-Ultra differential SCSI host adapter

In addition, the following embedded adapters are supported:
- Qlogic 1020 chip
- Qlogic 1040 chip
- NCR 53C810 / SYM20810

Fibre Channel Fabric Window, Page, and Agent Support
The Fabric Window and the Fabric Page both support Windows NT V4.0 SP3, SP4, SP5 on Intel and Alpha, Windows 95 and Windows 98. The Fibre Channel SAN Interconnect Agent supports Windows NT 4.0 SP3, SP4, SP5 on Intel and Alpha. In addition, this agent can be browsed from the following web browsers:
- On Windows NT and Windows 95/98 systems -- Microsoft Internet Explorer V4.01 and V5.0
- On Tru64 UNIX V4.0f and V5.0 systems – Netscape Communicator V4.5

The supported fabric elements include:
- Compaq StorageWorks SAN Switch 8
- Compaq StorageWorks SAN Switch 16
- Compaq StorageWorks Fibre Channel Switch 16
- Compaq StorageWorks Fibre Channel Switch 8
- Compaq Storage Hub 12
- Compaq StorageWorks Fibre Channel Tape Controller II

Distribution
Command Console is distributed via CD-ROM. Documentation is online. A printed copy of the Getting Started manual ships with the media. Command Console is also available via the World Wide Web at:

http://www.compaq.com/products/storageworks/

Command Console components for the HSZ22 controller are distributed only with the RAID Array 3000 solution. Components for the HSG80 and HSZ80 controllers are available as part of the RAID Array 8000 Software Solutions Platform kits. Command Console agents for the HSZ20/40/50/70 controller on HP-UX, IBM AIX, Sun Solaris, and Silicon Graphics IRIX platforms are included only in RAID Array Solution platform kits.

Ordering Information
Command Console is included with certain StorageWorks RAID Array platform kits and available as a separate product using the following part numbers:

License, media and doc.	QB-5GZAA-SA
License only	QM-5GZAA-AA
Installation Service	QT-5GZA9-I9
All NVLS	QT-5GZAA-TA
Telephone Service	QT-5GZAA-ZA
Package Product Serv.	QT-5GZAA- XA

Software Licensing
Command Console is furnished under license only. A license allows the installation and use of Command Console on one client with connections to 128 host systems. An additional license is required for each

additional client on which Command Console Client is installed. For more information on licensing terms and policies, contact your sales representative.

Software Warranty
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