



# Quick Setup Guide

**RAID Array 8000/ESA12000 Fibre Channel  
Storage System for Windows NT Server – Intel  
(ACS V8.3 with Fibre Channel Hub)**

## Before You Begin

In this Quick Setup Guide we tell you how to create an initial hardware configuration for both the *Compaq StorageWorks RAID Array 8000 Fibre Channel Storage System* and the *Compaq StorageWorks Enterprise Storage Array 12000 Fibre Channel Storage System* (the “RA8000/ESA12000 storage system” or the “storage system”).

To create this configuration you will:

- Install Storage Building Blocks (SBBs) and Program Cards in the RA8000/ESA12000 storage system cabinet;
- Install a fibre channel adapter in the server;
- Connect the fibre channel adapter to the storage system HSG80 controller via a fibre channel hub;
- Connect the server to the HSG80 controller to act as a maintenance terminal;
- Turn on the ac power to the storage system;
- Install device drivers in the server;
- Install the StorageWorks Command Console(SWCC)

Client Graphical User Interface;

- Configure a Storageset;
- And reboot the storage system.

Unless otherwise noted the instructions for installing and connecting storage system components are given for the SW370 pedestal, but apply equally to other Compaq cabinet options.

Before you start these steps follow the instructions on the shipping container to unpack the RA8000/ESA12000 storage subsystem.

Everything you need to create the initial hardware configuration is in the container, except for a flat-blade screwdriver and a #2 Phillips screwdriver.

### NOTE

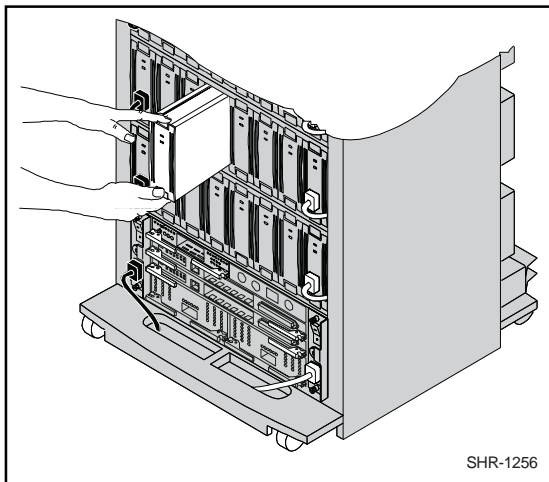
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You can find complete instructions for unpacking and installing the RA8000/ESA12000 storage subsystem in the RA8000/ESA12000 Fibre Channel Solution Software for Windows NT – Intel Installation Reference Manual, AA-RFA9B-TE (387387-002), and the RA8000/ESA12000 Storage Subsystem User’s Guide, EK-SMCPR-UG. A01 (387404-001).

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# 1

## Install the SBBs and Program Cards

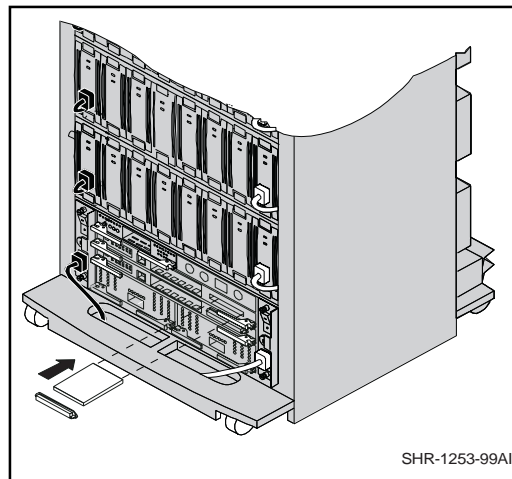


### Install the SBBs in the RA8000/ESA12000 Storage System Cabinet

- Insert an SBB into the shelf guide slots and slide the SBB into the shelf until the mounting tabs snap into place.
- For optimum SCSI bus distribution, install the SBBs from left-to-right and from bottom-to-top.

### Install the PCMCIA Card in the HSG80 Controller

- Remove the ESD cover from the controller PCMCIA slot.



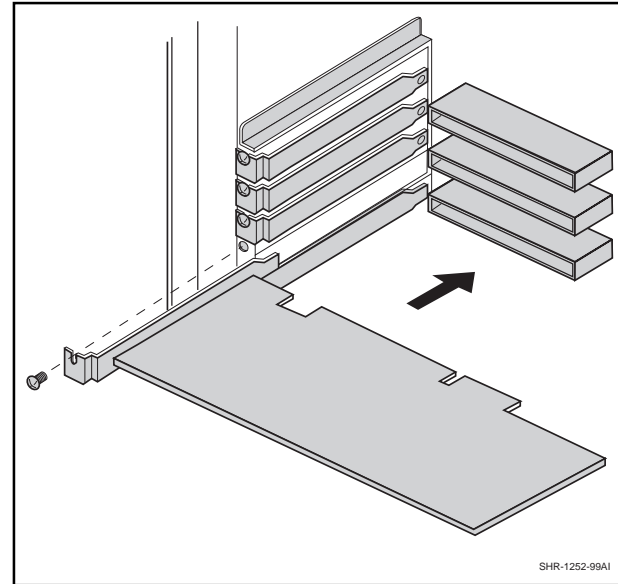
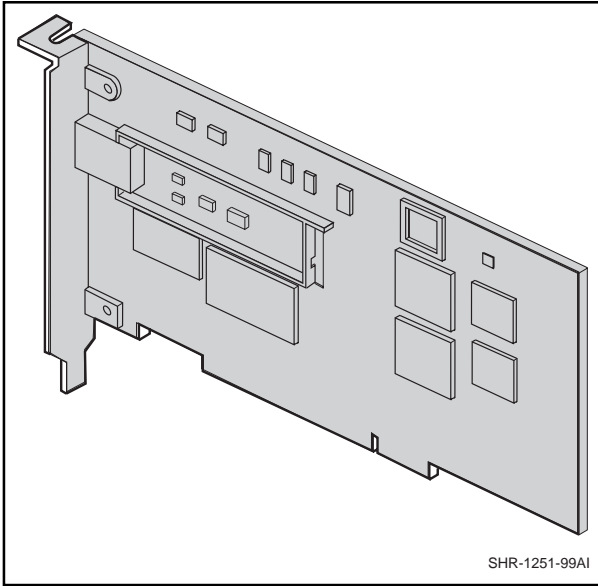
- Insert the PCMCIA card in the controller slot.
- Replace the ESD cover over the controller slot.
- Repeat the steps if you have two controllers.

### CAUTION

If you bump against the SCSI ID selector switch above the top controller, you can change the switch setting by mistake. Check the setting before you go on and reset the switch if necessary; the switch should be set on 0 for the first cabinet, 2 for the second cabinet, 3 for the third cabinet, and so on.

# 2

## Install the Fibre Channel Adapter



**NOTE:**Your adapter might not look like this.

### **Turn Off the Server**

- Shut down the operating system running on your server.
- Turn off the power to the server and all attached peripherals.
- Disconnect power cables from the server.

### **Insert the Adapter in the Server**

- Open the server to gain access to the expansion slots.
- Insert the adapter in an empty PCI expansion slot.
- Secure the adapter in the slot with the screw provided.

# 3

## Connect the Fibre Channel Adapter to the Storage System Controller

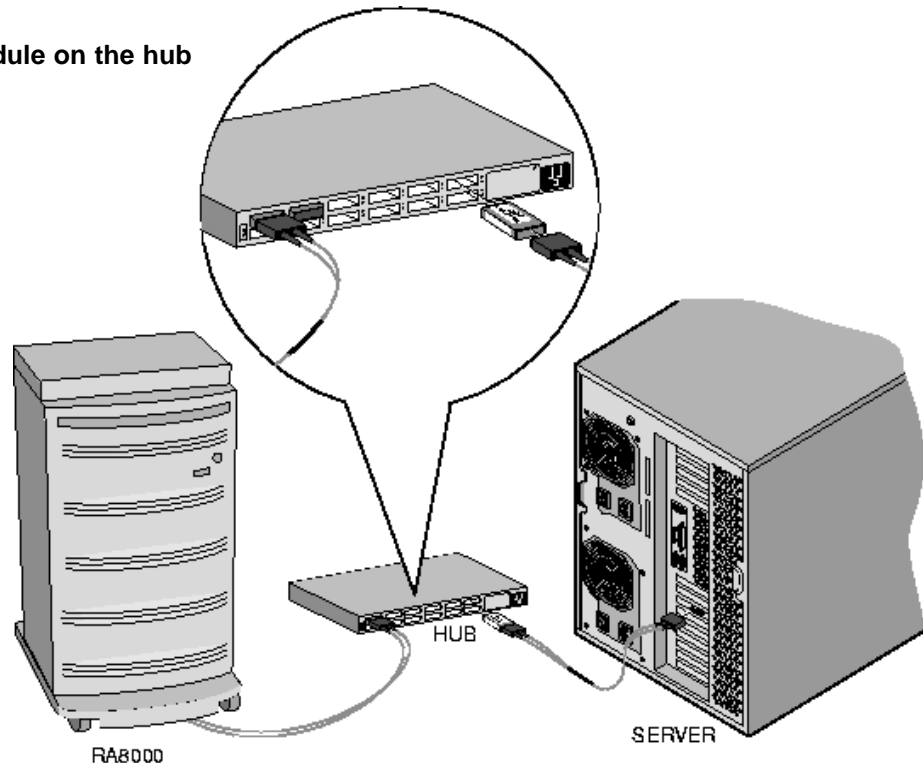
Connect the fibre channel adapter to the hub and the hub to the storage system controller with the fiber-optic cables supplied.

**Be sure to install a GBIC-SW module on the hub end of each cable.**

The following page illustrates the adapter-to controller connections for the four possible configurations:

- single controller, one server
- single controller, two servers
- dual controller, one server
- dual controller, two servers

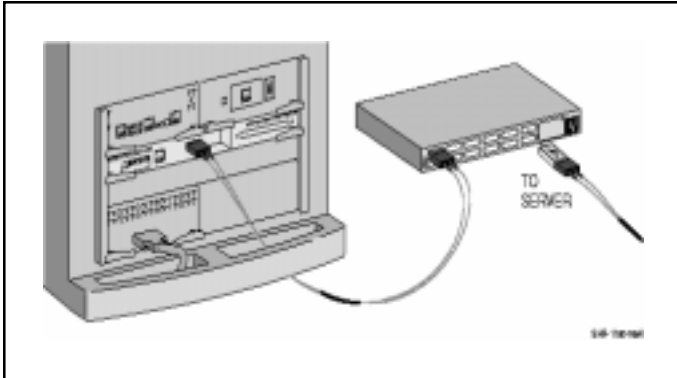
Refer to the Application Notes, AA-RHORA-TE, for information about other configurations.



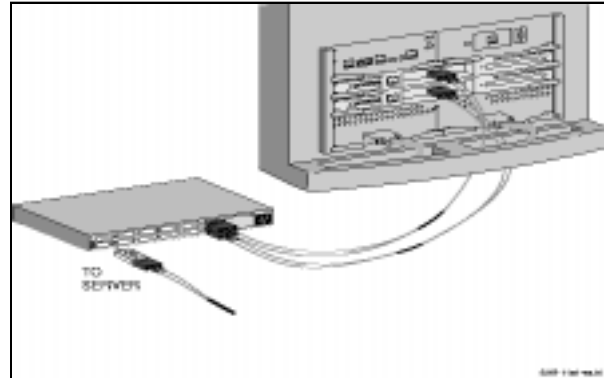
SHR-1179-98A1

# 3

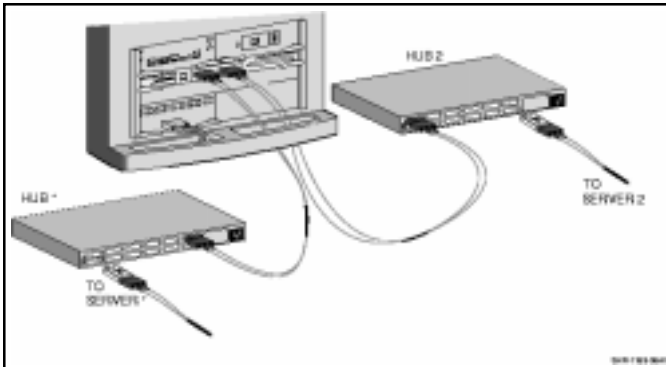
## Connect the Fibre Channel Adapter to the Storage System Controller (Cont'd)



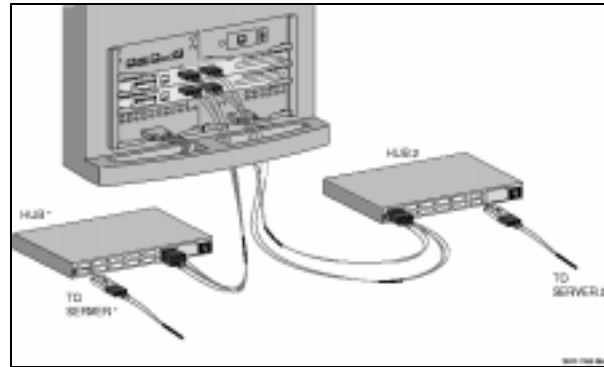
Single Controller, One Server



Dual Controller, One Server

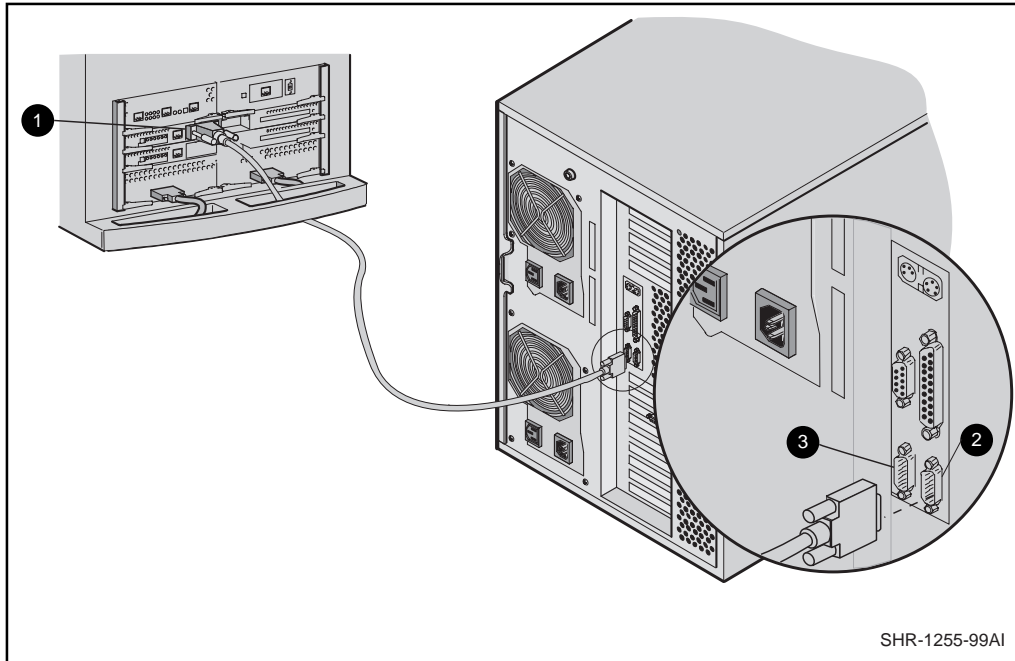


Single Controller, Two Servers



Dual controller, Two Servers

## 4 Connect the Server as a Maintenance Terminal



### **Connect the Server to the HSG80 Controller to Provide for a Maintenance Terminal**

- Connect the RJ12 connector on the communications cable to the maintenance port on the HSG80 controller **1**.
- Connect the 9-pin serial connector on the communications cable to either the COM1 or COM2 port on the PC **2** or **3**.

#### **NOTE**

Make a note of the serial port you use; you need to know it when you set up your communication program and configure the controller.

# 5

## Turn on the System Power

### Connect the Hub to an AC Power Outlet

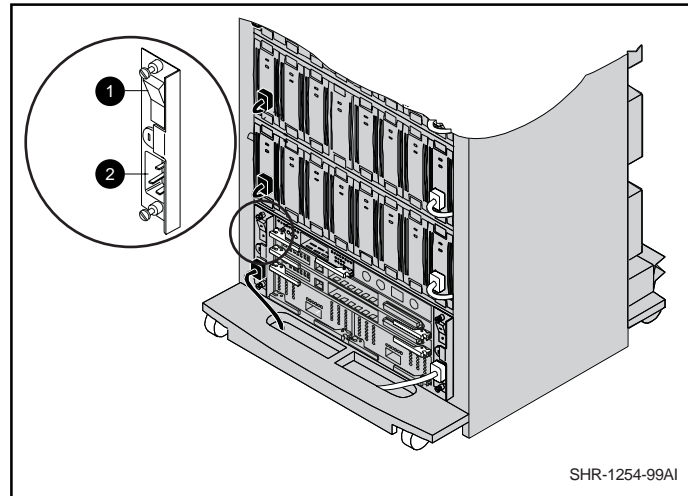
- Connect one end of the hub ac power cord to the hub.
- Connect the other end of the ac power cord to an ac outlet.

### Turn on the Server

### Turn on the Storage System Power

- Connect one end of the storage system cabinet ac power cord to the cabinet ac receptacle ❷.
- Connect the other end of the power cord to an ac outlet.
- Push in the “1” side of the cabinet ac power switch ❶.

- When the RESET LED on the HSG80 controller blinks at a rate of once per second the storage system is ready to operate.





# 6

## Install Device Drivers on the Server

### Install the Adapter Driver

- From the Windows NT Start menu select *Settings*; then open *Control Panel*.
- Open *SCSI Adapters* from the Control Panel.
- Select *Drivers* tab, and click on *Add*.
- Select *Have Disk*.
- Insert the diskette labeled *KGPSA NT Device Driver and Download Utility* into the diskette drive (the diskette is included in the KGPSA Adapter Kit).
- Specify the path to the NT driver by typing `A:\I386`; then click *OK*.
- Select *Emulex LP6000/LP7000/LP8000, PCI Fibre Channel Adapter* from the *SCSI Adapter List*; then click *OK*.
- Answer *NO* to the restart question; then go to the next section to install the device driver.

### Install the Fibre Channel Software

- Insert the *HSG80 Solution SW V8.3 for Windows NT* CD-ROM into the CD-ROM drive.
- Wait for the *Auto-run Browser* utility to start; if *Auto-run* is not enabled, go to *CD drive* and double-click on the *install.bat* file.
- Click on *Solution Software for ACS V8.3*. The installation process copies the driver into the correct subdirectory and creates the necessary Registry entries.
- Click on *Install FC Software/HSZ Disk Driver*.

#### NOTE

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The Hszinstal FC utility prompts you to select an arbitrated loop physical address (ALPA) for your fibre channel adapter. Compaq recommends that you use the lower-numbered addresses ("1", for example) with your adapter. Refer to Appendix C of the *RA8000/ESA12000 Fibre Channel Solution Software for Windows NT – Intel Installation Reference Manual* for a list of valid ALPA addresses.

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- When installation is complete answer *NO* to the restart question and go to the next section.

# 7

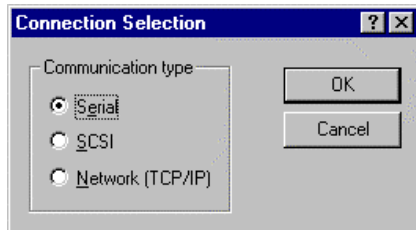
## Install StorageWorks Command Console (SWCC) Client and Disable Communication LUN

### Install the SWCC Client

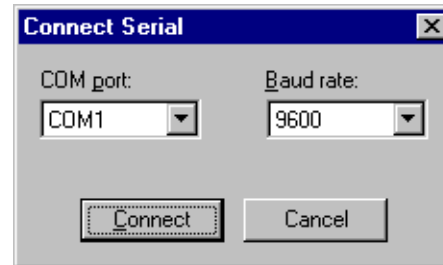
- Insert the *HSG80 Solution SW for Windows NT* CD-ROM in the CD-ROM drive.
- Wait for the *Auto-run CD Browser* utility to start; if *Auto-run* is not enabled, go to *CD drive* and double-click on the *install.bat* file.
- Click on *Solution Software for ACS V8.3 with FC Hub*.
- Click on *StorageWorks Command Console*.
- When the setup wizard appears, follow the instructions to complete the installation.
- When installation is complete, restart the system by answering *YES* to the restart question.

### Disable Communication LUN

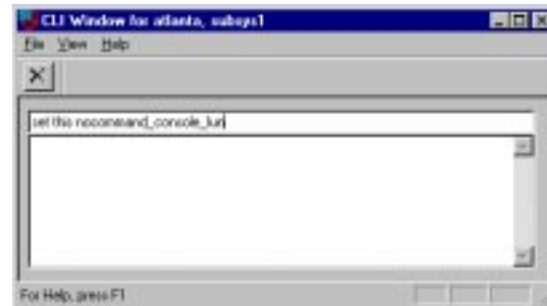
- Click on the Windows taskbar *Start* button.
- Move the pointer to *Programs* → *Command Console* → *CLI Window*; click on *CLI Window* to display the *Connection Selection* dialog box.



- Click on the *Serial* button and *OK* to display the *Connect Serial* dialog box.



- Select the COM port that the HSG80 controller is connected to (COM1 or COM2).
- Select a baud rate of 9600.
- Click *Connect* to display the *CLI Window*.



- Type:  

```
set this_controller nocommand_console_lun
```
- Set terminal speed to 19200 type:  

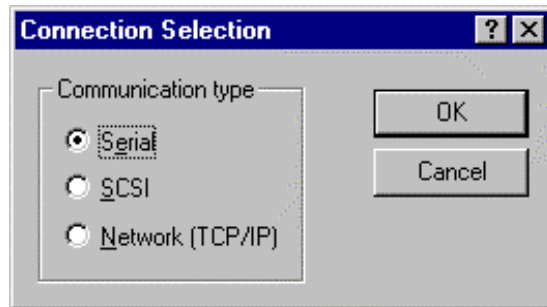
```
set other_controller terminal_speed=19200  
set this_controller terminal_speed=19200
```
- Close the *CLI Window*.

# 8

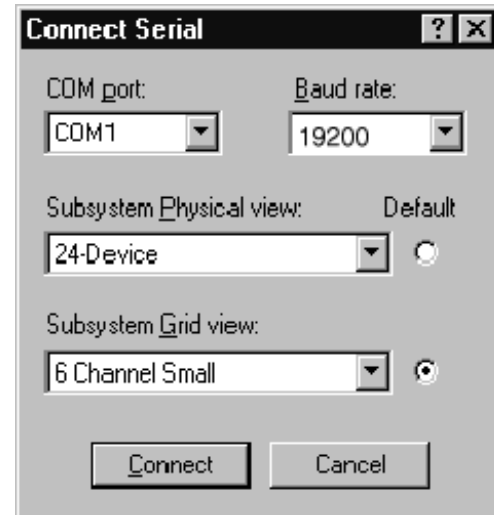
## Launch the SWCC Client

### Launch the Client

- Click on the Windows taskbar *Start* button.
- Move the pointer to *Programs* → *Command Console* → *HSG80 Storage Window*; click on *HSG80 Storage Window* to display the *Connection Selection* dialog box.



- Click on the *Serial* button and *OK* to display the *Connect Serial* dialog box.

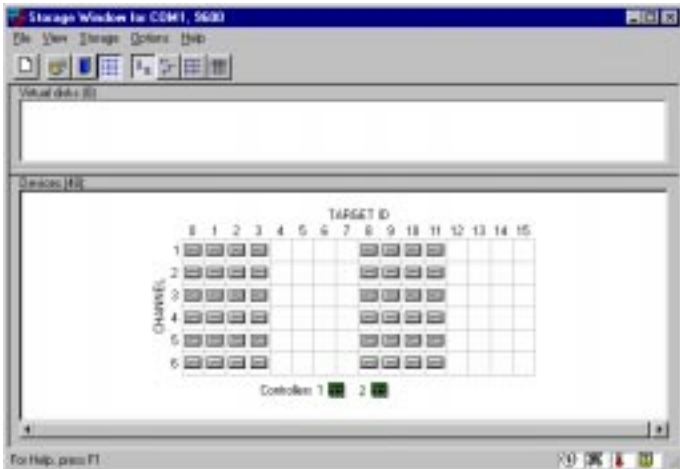


- Select the server COM port that the HSG80 controller is connected to (COM1 or COM2).
- Select a baud rate of 19200.
- Click the *Connect* button; after two to three minutes the *Storage Window* is displayed.

# 9 Verify Controller Properties

## Display SCSI Devices in the Devices Windowpane

- Click on *Storage* in the *Storage Window* menu line.
- Move the pointer to *Device* → *Add*; click on *Add*. SWCC finds installed drives and displays them in a grid by CHANNEL and SCSI TARGET ID number.



## Verify Properties

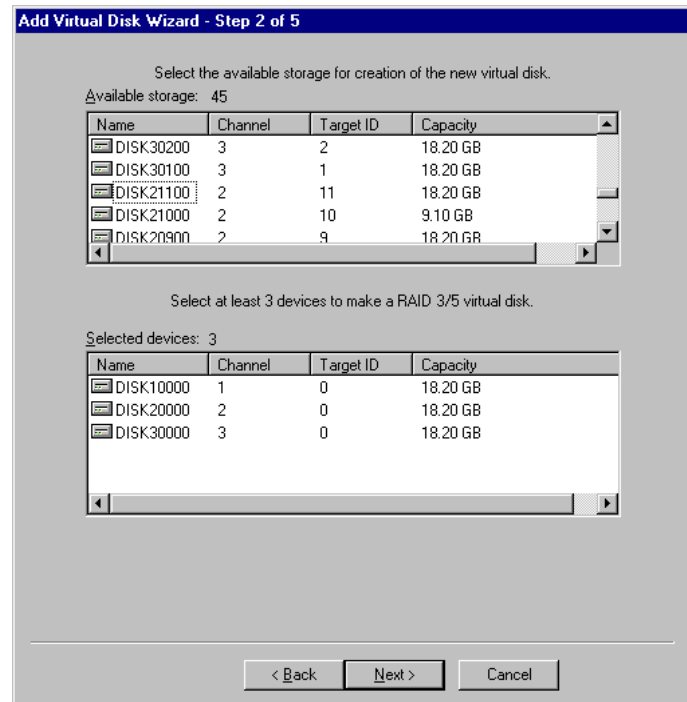
- Double-click on a controller icon in the *Storage Window*; the *Controller Properties* screen is displayed.
- Click on the tabs of the *Controller Properties* screen successively and confirm that the following values are set:

<i>General</i> tab	Allocation class: 0 SCSI version: SCSI-2
<i>Host Ports</i> tab	
Host Port 1	Requested Topology: LOOP_HARD Requested Port Address: 71
Host Port 2	Requested Topology: LOOP_HARD Requested Port Address: 72
<i>Cache</i> tab	Cache flush time (seconds): 10 Respond to internal cache battery condition: selected
<i>Battery</i> tab	Confirm that the battery is fully charged
<i>Communications</i> <i>LUN</i> tab	Confirm that the screen is disabled (greyed out); if it is not, return to Step 7 to disable the Communication LUN.
<i>Connection</i> tab	Operating System: WINNT Unit Offset: 0 – 99 (Host Port 1) 100 – 199 (Host Port 2)

# 10

## Configure a StorageSet

- Click on *Storage* in the *Storage Window* menu selection line and select *Add Virtual Disk* to begin Step 1 of the *Add Virtual Disk Wizard*.
- Click the *Striped parity device group (RAID 3/5)* radio button; click *Next>* for Step 2.
- Select the devices you want to include in the virtual disk by clicking on the disks listed in the *Available storage* windowpane; as you select a disk it is added in the *Selected devices* windowpane.
- Click *Next>* for Step 3.



# 10 Configure a StorageSet (Cont'd)

- Select the capacity for the virtual disk. You can select the maximum capacity or create partitions by selecting only a portion of the available maximum. If you create partitions, complete all steps for this partition; then access the Wizard again, make the same choices and create another partition.
- Click *Next>* for Step 4.
- Enter the *Virtual Disk Name*; Windows NT recognizes virtual disks that map to LUN 0 – 7 (refer to the application notes, AA–RH0RA–TE, for details).
- Click on the box *Save controller configuration to virtual disk*.
- Click *Next>* for Step 5.

Add Virtual Disk Wizard - Step 3 of 5

Set the capacity for the new virtual disk.

Based on the RAID level and devices you have selected, the capacity available for the new virtual disk is displayed below.

Selected RAID level: 3/5 (striped parity device)

Set virtual disk capacity

Specify a capacity within this range:

Minimum capacity: 1 MB  
Maximum capacity: 36409.74 MB

Capacity for virtual disk: 36409.74 MB

< Back Next > Cancel

Add Virtual Disk Wizard - Step 4 of 5

Set the options to be used when creating this new virtual disk.

Virtual Disk Name

Name (i.e. DD - D100): 30

Enable writeback cache  Enable read cache  
 Enable readahead cache  Enable writeprotect

Maximum cached transfers: 32 blocks

Host access:  
NEWCOMBO

Save controller configuration to virtual disk

Read source

Copy speed

Replacement policy: BEST\_PERFORMANCE

Strip size (in blocks): DEFAULT

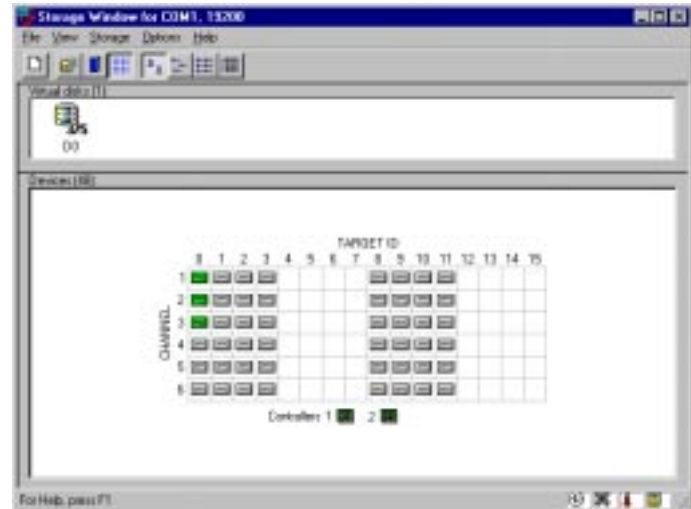
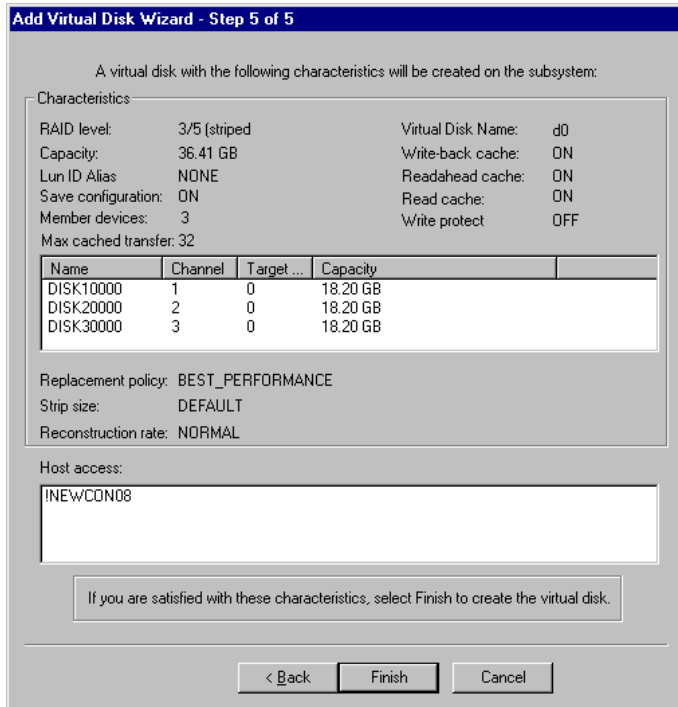
Reconstruction rate: NORMAL

< Back Next > Cancel

# 10

## Configure a Storageset (Cont'd)

- Step 5 recaps your choices; if you are not satisfied, you can return to the applicable Wizard step using the *Back* button. When you are satisfied with your choices click *Finish*.
- When you return to the Storage Window you see the virtual disk you created illustrated in the *Virtual disks* windowpane. The hourglass on the disk icon indicates the Storageset is being initialized. The drives you used to create the RAIDset are highlighted in the *Devices* windowpane.



# 11

## *Reboot the System*

### **Congratulations!**

You have now completed all the steps required to create an initial hardware configuration for your controller. To complete your installation reboot the system and refer to Chapter 3 of the guide *Completing Your Storage Configuration Under Windows NT*.

COMPAQ recommends that you verify and record your configuration for future reference.

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