

# Internal Cabling Guide for the HP Smart Array 5300 Series Controller on an HP Server rx5670



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Part Number A9828-96003

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## Introduction

This document describes how to cable an HP Smart Array 5300 controller card, Ultra160 RAID card (HP product number A9525A/A9826A), to the internal hard drives of an HP Server rx5670.

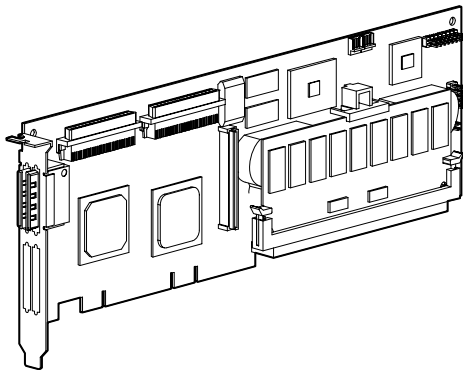
**NOTE:** These instructions do not apply if you are connecting the HP Smart Array 5300 controller card to an external mass storage box. Proceed to the *HP Smart Array 5300 Controller User Guide* that shipped with your HP Smart Array 5300 controller card.

The Smart Array 5300 Series controller cards are comprised of two models: the 5302 and the 5304. Model 5302 has two Wide Ultra160 SCSI channels and 128 MB of cache and model 5304 has four Wide Ultra160 SCSI channels and 256 MB of cache.

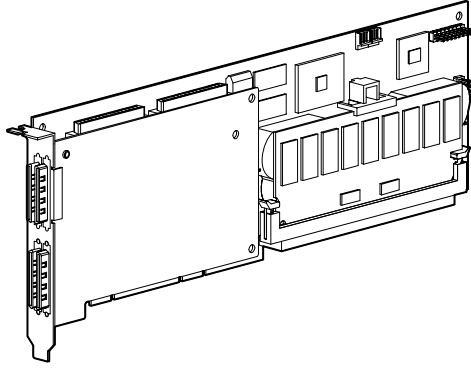
Product Number	Description
A9825A	SA5302/128MB
A9826A	SA5304/256MB

Before you begin, you will need:

- The two extension cables included in this kit (p/n A9828-63001 and A9828-63002)
- Smart Array 5300 controller cards (refer to Figures 1 and 2)



**Figure 1: The Smart Array 5302 controller card**



**Figure 2: The Smart Array 5304 controller card**

**NOTE:** If an HP Server rx5670 is ordered from the factory along with an internal RAID option (with the HP Smart Array 5300 controller card and an extension cable A9828-63001 preinstalled), this extension cable will connect the hot-plug drives A and B to PORT 1 of the HP Smart Array 5300 controller card installed in PCI slot 4. Refer to Figure 5 for the PCI slot location and Figure 7 for the physical drive location. The additional cable A9828-63002 will be placed in the server top tray. The Internal hot-plug drives C and D will still be connected to the internal SCSI adapter in PCI slot 3.

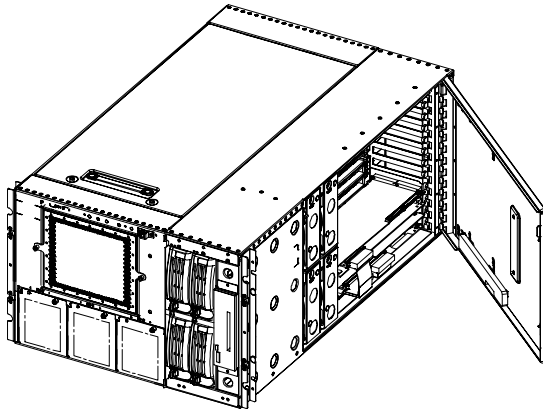
PORT 2 of the HP Smart Array 5300 controller card will still be available to connect the external StorageWorks mass storage or internal hot-plug drives C and D. If the internal hot-plug drives C and D are required for RAID, you will need to install cable A9828-63002 as described in the "Recabling for RAID" section later in this document.

If you opt to use both ports of the Smart Array 5302 controller card for your internal drives, you will need to purchase an additional HP Smart Array controller if you want external RAID mass storage.

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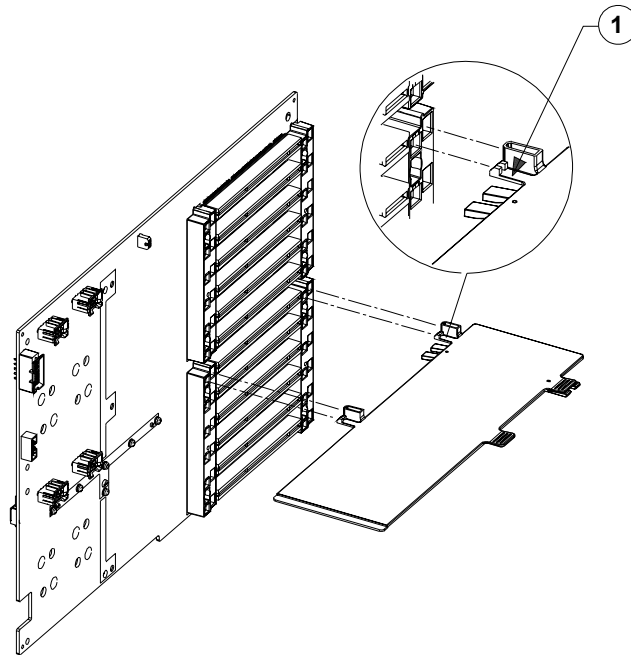
## Installing the HP Smart Array 5300 Controller Card

1. If the server is running, shut down the OS, power off the server, and unplug the power cord.
2. Remove the side cover of the server:
  - a. Loosen the captive T-15 screws that hold the side cover in place.
  - b. Grasp the strap handle, pull the side cover slightly away from the server, and pull the cover toward the front of the server to free the cover tabs from the slots in the rear of the chassis (refer to Figure 3).



**Figure 3: Removing the side cover**

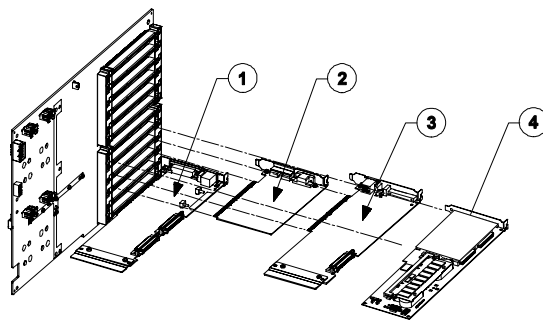
3. The HP Smart Array 5300 controller card must be installed in PCI slot 4 for internal RAID. If another PCI card is located in slot 4, remove the card and relocate it to another slot. If the PCI card separator/extractor is in slot 4, remove it as follows:
  - a. Remove the corresponding PCI card.
  - b. Carefully slide a long shaft, medium width, and flat blade screwdriver into the side service bay along the top of the PCI card separator/extractor.
  - c. At the point where the PCI card separator/extractor inserts into the PCI backplane connector (item 1 in Figure 4), there are two slotted, hook tab connectors on the PCI card separator/extractor, one on either side of the PCI backplane connector. Press one, then the other, to disengage the separator/extractor from the PCI backplane.
  - d. Slide the PCI card separator/extractor out of the PCI card cage.



**Figure 4: PCI card separator/extractor**

4. Install the HP Smart Array 5300 controller card in PCI Slot 4 (refer to Figure 5). When finished, you should have the following cards in the server's first four PCI slots:
  - The MP/SCSI board located in PCI slot 1 (indicated as "1" in Figure 6)
  - An optional Video board located in PCI slot 2
  - The LAN/SCSI board located in PCI slot 3
  - The HP Smart Array 5300 controller card must be installed in PCI slot 4 for internal RAID

When the card is installed, proceed to the next section.



**Figure 5: PCI card order**

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# Cabling the HP Smart Array 5300 Controller Card to the Server

## Default SCSI Cabling

From the factory, the internal hot-plug drives for the HP server rx5670 are connected to the integrated SCSI as follows:

- The MP/SCSI board in PCI slot 1 has a SCSI connector cabled to physical drives A and B (see Figures 6 and 7).
- The LAN/SCSI board in PCI slot 3 has a SCSI connector cabled to physical drives C and D (see Figures 6 and 7).

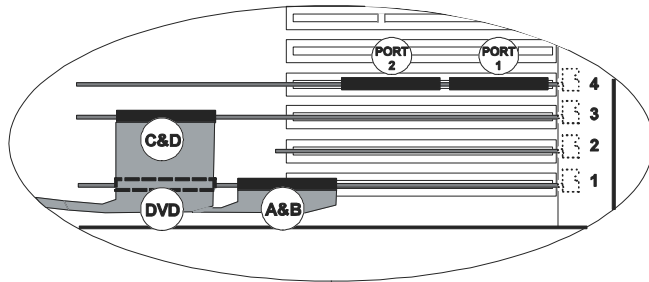


Figure 6: Default cabling for internal SCSI hot-plug drives

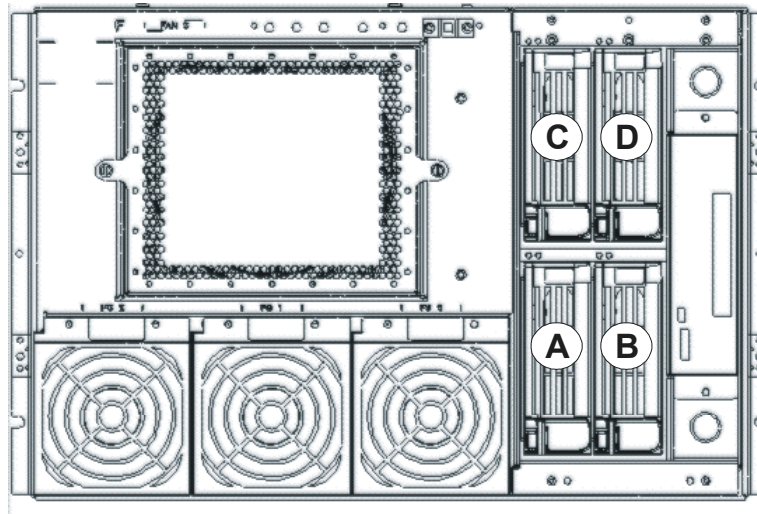


Figure 7: Physical drive location (front of the server with the bezel removed)



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## Recabling for RAID

To use RAID with your hot-plug drives, you will need to disconnect the internal SCSI cables from their embedded controller and reconnect them to the HP Smart Array 5300 controller card using the supplied A9828-63001 and A9828-63002 cables. Follow the instructions below.

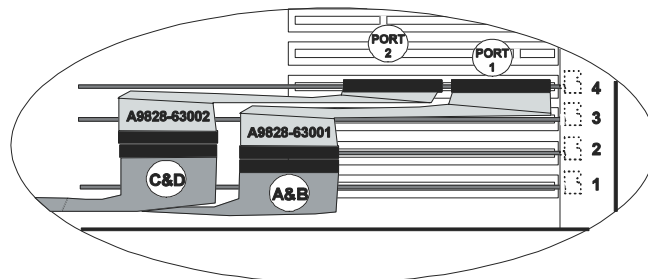
### Setting Up RAID on Hot-Plug Drives A and B

1. Be sure the HP Smart Array 5300 controller card is installed in PCI slot 4. Refer to “Installing the HP Smart Array 5300 Controller Card” section.
2. Plug one end of the A9828-63001 cable into the HP Smart Array 5300 controller card’s internal PORT 1 connector. The cable should be routed between the HP Smart Array 5300 controller card and the side cover (refer to Figure 8).
3. Unplug the SCSI cable that connects the A and B hot-plug drives to the MP/SCSI board located in PCI slot 1. There are two connectors on the MP/SCSI board. When looking at the MP/SCSI board, as shown in Figure 8, the connector towards the rear of the server goes to hot-plug drives A and B, the connector towards the front of the server, where the drives are located, is for the DVD drive.
4. Take the unplugged SCSI cable and connect it to the A9828-63001 cable (Figure 8). Once the cable is plugged at both ends, it is parallel to the side cover.
5. If only hot-plug drives are required, the setup is complete and you may close the server. Otherwise continue on to the next section.

### Setting Up RAID on Hot-Plug Drives C and D

1. Plug one end of the A9828-63002 cable into the HP Smart Array 5300 controller card’s internal PORT 2 connector.
2. Unplug the SCSI cable that connects the C and D hot-plug drives to the MP/SCSI board located in PCI Slot 3.
3. Take the unplugged SCSI cable and connect it to the A9828-63002 cable (Figure 8). Once the cable is plugged at both ends it is parallel to the side cover.
4. When finished, close the server.

**NOTE:** To connect drives A, B, C, and D follow all the steps in the above two sections: Setting Up RAID on Hot-Plug Drives A, B, C, and D.



**Figure 8: Recabling for RAID**

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**NOTE:** Once the setup is complete, the cables are parallel to the side cover.

## Configuring the Server for RAID

To complete the installation and set up RAID for your server's internal hot swap drives, you will need to follow the instructions in the documents listed below.

## Where to Go for Additional Help

To complete the installation and set up RAID for your server's internal hot swap drives, and to perform the following tasks, follow the instructions in the *Smart Array 5300 Controller User Guide*:

- Configure your HP Smart Array 5300 controller card in an HP Integrity server. Use HP Smart Array 5300 utilities and command line options from the EFI Shell.
- Install operating system-specific HP Smart Array 5300 utilities and software that help you manage your RAID.
- Use operating system-specific HP Smart Array 5300 utilities and software that help you manage your RAID.
- Configure the HP Smart Array 5300 for an external RAID storage system.