Dolby® DP600 Hard Drive Replacement Guide

Issue 1 Part Number 9110440

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DP600 Hard Drive Replacement Instructions

This document explains how to replace a DP600 hard drive. Before you begin, be sure you have the following:

- Phillips screwdriver
- Hard drive replacement kit (DP600HD-SPK)with hard drive (Cat. No. 898-7-P)

Please read this entire document before you begin the procedure. The procedure will take approximately 30 minutes.

Note: You can power down the unit before beginning this procedure, but it is not necessary.

Replacing a Hard Drive

The DP600 has five physical internal hard drives. Drives 1 and 2 are arranged in a RAID 1 configuration to provide protection for the operating system and local storage. The remaining three hard drives are configured as separate drives to provide local storage. This configuration of one RAID pair and three separate drives represents four logical drives. There are four bicolor LEDs on the front panel, labeled **1**, **2**, **3**, and **4**. These LEDs indicate the status of the DP600's four logical internal hard drives. The drive LEDs function as follows:

- Off (nonilluminated): Indicates a functional drive with no current disk access activity
- Green: Indicates normal drive activity
- Red: Indicates a drive failure

LED **1** shows the status of the two-drive RAID 1 configuration. The operating system is installed on these mirrored drives to prevent a physical drive failure, resulting in an inoperable system. If either of the mirrored drives fails, the other RAID drive enables the system to operate normally until the failed drive is replaced.

LEDs **2**, **3**, and **4** indicate the status of the other three physical disks. These disks are configured as separate drives and do not have RAID backup capability. If any of these drives fail, the failed drives must be replaced, and any work orders in progress during the failure must be restarted.

Please refer to the Addendum at the end of this document for the replacement text for this section.

If one of the drive LEDs turns red, refer to Table 1 to determine which physical drive failed. Typically, the DP600 automatically rebuilds the RAID array when one of the RAID drives has a problem or is replaced (with the power on). During the RAID rebuild process, LED 1 blinks in red in half-second intervals. When the rebuild process is complete, LED 1 stops blinking.

In some instances, you must initiate the rebuild process manually, as described at the end of this procedure (for example, if you replace a non-RAID drive).

If you replace both RAID drives, you also need to reinstall the DP600 software. In such a case, follow the instructions for a clean installation in Section 3 of your *Dolby DP600 Program Optimizer Manual*. When you reinstall the software, the system automatically synchronizes the two RAID drives, re-creating the original mirrored RAID array (manual rebuild not required).

Table 1 shows the LED conditions that specify the failed drive.

Table 1 Local Storage LED Conditions

Front-Panel LED	Condition	Failed Physical Drive
1	Solid red	1
1	Blinks in red in two-second intervals	2
1	Blinks in red in half-second intervals	Rebuilding RAID
2	Solid red	3
3	Solid red	4
4	Solid red	5

To replace a hard drive:

1. Look at the front-panel drive LEDs, then refer to Table 1 to determine which drive has failed. The example in Figure 1 shows that drive 3 has failed.

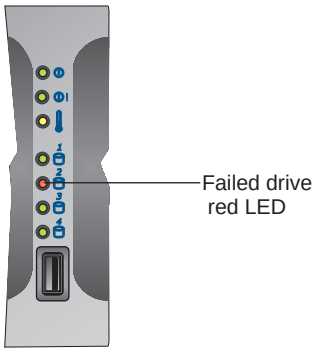

Figure 1 Red LED Indicates Failed Disk Drive

2. Swing the touch-screen panel out to the left, as shown in Figure 2.

Figure 2 Swing Out Touch-Screen Panel

3. Locate the small pry areas on the right panel, as shown in Figure 3.

Figure 3 Locate Pry Areas Behind Right Panel

4. Using your fingers or a cushioned screwdriver, gently pry off the right panel from its left side (the other side is a slotted lock), as shown in Figure 4.

   Be careful not to drop it, as the panel is deceptively heavy and will come off suddenly once the locking mechanism disengages.

Figure 4 Remove Right Panel

The hard drive bay is now exposed, as shown in Figure 5.

Starting from the left side of the drive cage, the first slot contains physical drive 1 (RAID drive 1). The second slot contains physical drive 2 (RAID drive 2). Starting with the third slot, physical drives 3, 4, and 5 are installed next, in that order. Figure 5 shows how the drives are numbered from left to right (numbers do not appear on the actual unit).

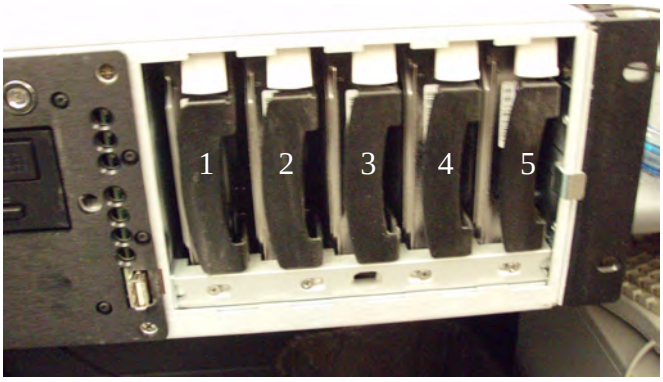

Figure 5 Hard Drive Bay Exposed

5. Loosen (do not remove) the four Phillips-head screws securing the retaining bracket, then slide the screws inward, freeing the bracket.

   As viewed left to right, the first two screws move to the right and the second two screws move to the left, as indicated by the red arrows shown in Figure 6 (the arrows do not appear on the unit).

Figure 6 Loosen Retaining Bracket Screws

6. Remove the retaining bracket, as shown in Figure 7.

Figure 7 Remove Retaining Bracket

7. Match the failed drive's number (determined in step 1) with the corresponding physical drive, grasp the drive's handle, then press the drive's finger tab and slide it out of its slot, as shown in the examples in Figure 8 and Figure 9.

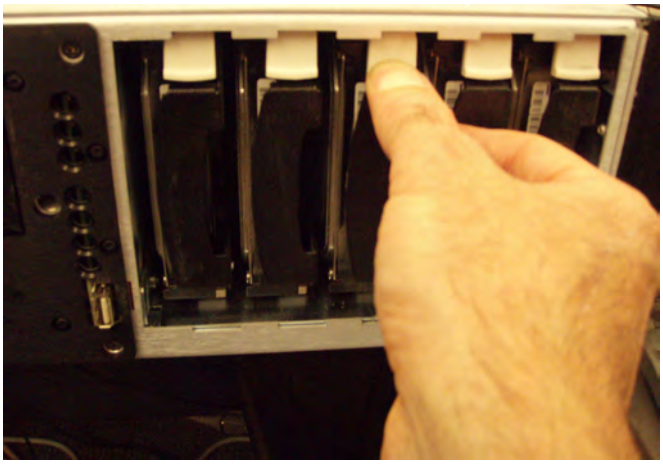

Figure 8 Press on Failed Drive's Finger Tab

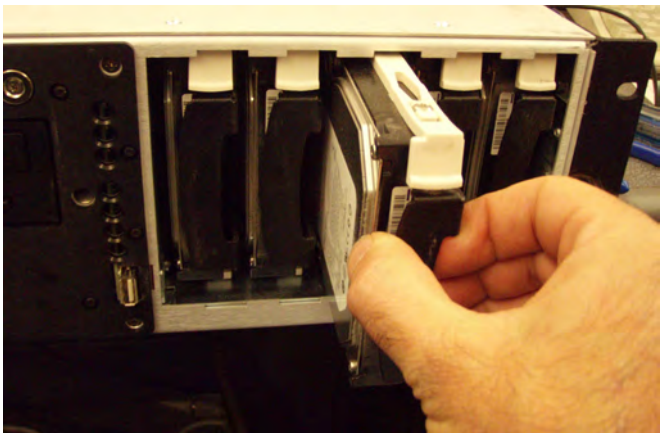

Figure 9 Slide Failed Drive out of Slot

8. Be sure that no work order is running, then press the replacement drive's finger tab, and firmly but gently slide the drive into its slot until you feel resistance, which indicates that the drive is seated in its socket (see Figure 10 and Figure 11).

   You can replace a drive with a higher capacity unit but not with a lower capacity unit.

Figure 10 Grasp Replacement Drive's Finger Tab

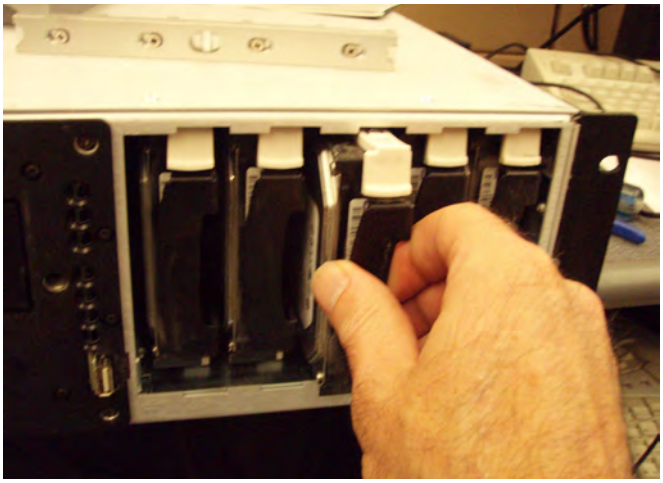

Figure 11 Slide Replacement Drive into Slot

9. Reposition the retaining bracket, slide the screws outward to their original position, then tighten each screw to secure the drives in place, as shown in Figure 12.

Figure 12 Reinstall Retaining Bracket

10. Replace the right panel by first engaging the right-side slotted hinge, and then pressing on the securing mechanism on the left-side of the panel, as shown in Figure 13 and Figure 14.

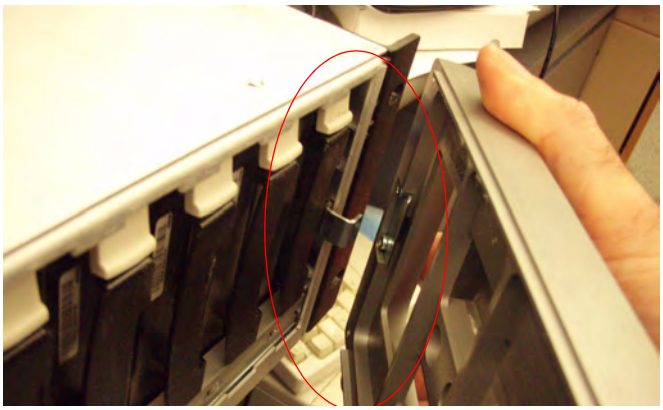

Figure 13 Replace Right Panel Step A

Figure 14 Replace Right Panel Step B

Please refer to the Addendum at the end of this document for replacement text for step 11.

11. If you disconnected power, reconnect it now.

    If you replaced one RAID drive and did not shut down the system, the RAID array rebuilds automatically. However, if you are not running multiple work orders, we recommend shutting down the system, rebooting, and manually rebuilding the RAID array, as described in section 3.1.2 of the *Dolby DP600 Program Optimizer Manual*.

    If you replaced a non-RAID drive, rebooting and manual rebuilding is required, as described in section 3.1.2 of the manual.

    If you replaced both RAID drives (drives 1 and 2), you need to use the *DP600 Installation Software* DVD to reinstall the software, as described in section 3.3 of the manual. In such a case, you perform a clean installation and the system automatically synchronizes the two RAID drives, re-creating the original mirrored RAID array (manual rebuilding not required).

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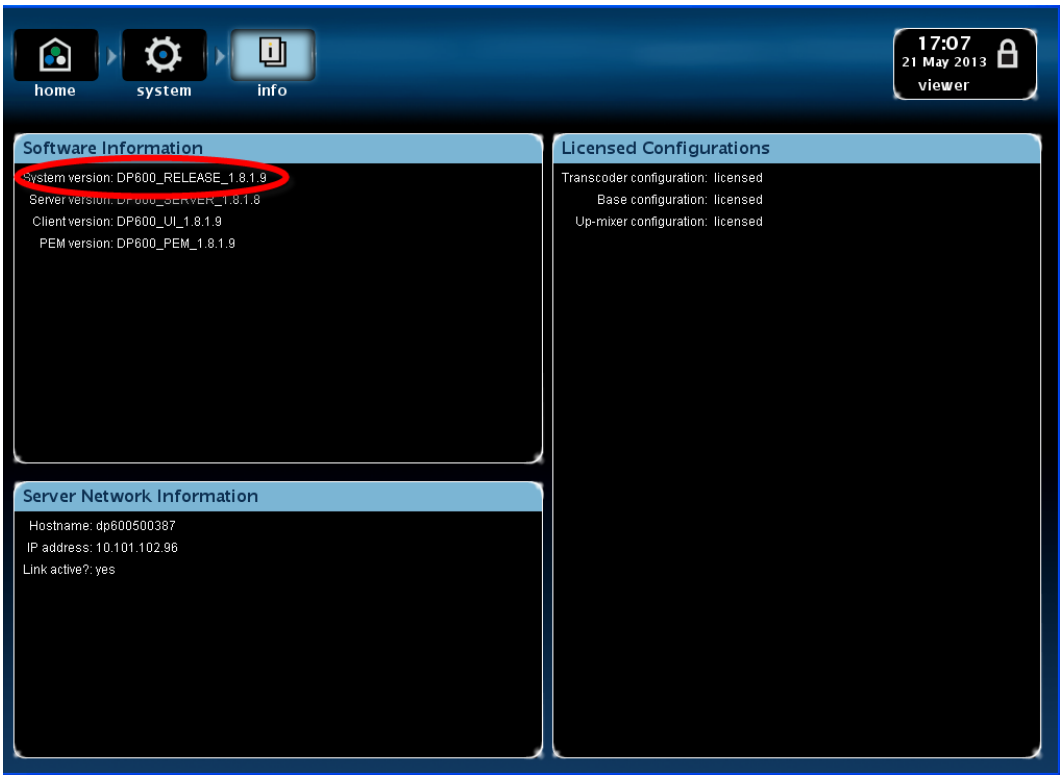
Dolby DP600 Hard Drive Replacement Guide Addendum: Firmware Specific Information

DP600 Hard Drive Replacement Instructions

Addendum: Firmware-specific information

This addendum to the Hard Drive Replacement Instructions details firmware-specific information relevant to the behavior of the DP600 when replacing hard drives. Be sure to reference the DP600 firmware version before attempting a hard drive replacement as this will provide important guidance when proceeding with the replacement process.

To find the firmware version your DP600 is currently running, navigate to the System->Info page where the firmware version will be displayed:



The following text replaces the redacted text on page 2 of the Hard Drive Replacement document:

> If one of the drive LEDs turns red, refer to Table 1 to determine which physical drive failed. Typically, the DP600 automatically rebuilds the RAID array when one of the RAID drives has a problem or is replaced (with the power on). During the RAID rebuild process, LED 1 blinks red in half-second intervals.
>
> **V1.5** firmware versions and earlier will not automatically clear this indication when the rebuilding process is complete, and once the rebuild process is complete, the blinking LEDs will only be cleared by a system reboot via the front panel. Firmware versions 1.6 and above automatically clear this indicator when the rebuilding process is complete and do not require a system reboot.
>
> When running firmware version **1.8.1.9** and above, save a system backup of the DP600 configuration to an external USB drive before swapping out any internal drives. (System backup is available in **V1.6** and **V1.7** firmware only during the software installation procedure. System backup is not available at all in firmware versions **1.5** and earlier.)
>
> With all firmware versions, if both RAID drives (physical drives 1 and 2) are replaced at the same time, a clean software reinstall is required. When you reinstall the software, the system automatically synchronizes the two RAID drives, re-creating the original mirrored RAID array.

The following text replaces the redacted text in Step 11 on page 9 of the Hard Drive Replacement document:

If you disconnected power, reconnect it now.

DP600 Firmware Versions 1.5 and earlier:
Replaced hard drives should be initialized one of three ways:
1. Through a software reinstall, or
2. Manually initializing the drive through the 3Ware BIOS as described in section 3.1.2 of the DP600 User's Manual, Issue 1 downloadable from the DP600 web client by clicking on the book icon  displayed when first navigating to the DP600 Web Client from your browser, or
3. Through a remote session with a Dolby engineer who can manually initialize the new drives.

If both RAID drives (physical drives 1 and 2) are replaced at the same time, a clean software reinstall must be performed, in which case the unit will need to be rebuilt from scratch including installation of the license file, all hotfolder workorders and upload of all custom profiles.

DP600 Firmware Versions 1.6 and 1.7:
Replaced hard drives should initialize automatically on their own or after a system reboot.

If both RAID drives (physical drives 1 and 2) are replaced at the same time, a software reinstall must be performed. Use the external system backup option combined with a clean system installation option during the installation process to recover your unit's settings and profiles.

DP600 Firmware Versions 1.8.19 and later:
Replaced hard drives should initialize automatically on their own or after a system reboot.

If both RAID drives (physical drives 1 and 2) are replaced at the same time, a software reinstall must be performed. Use the external system backup created at the start of this process to reload the system settings when prompted during the installation process to recover your unit's settings and profiles.