Swapping out an internal disk drive

This diagram shows the workflow of the drive replacement procedure.

Video overview

This video shows an overview of the internal disk drive replacement procedure.

*NetApp video: Hot-swapping an internal disk drive*

Hot-swapping an internal disk drive

When a disk drive fails, the storage system logs a warning message to the system console indicating which disk drive has failed. In addition, both the fault LED on the operator display panel and the fault LED on the failed disk drive are illuminated. You can hot-swap an internal disk drive (a disk drive that resides in the controller module) while the system remains powered on.

Before you begin

- The replacement disk drive must be supported by your system.
  *NetApp Hardware Universe*
- Disk shelf (IOM), disk drive, and if applicable, ACP firmware should be current on all disk shelves in your system before adding new disk shelves, shelf FRU components, or SAS cables.
  Best practice is to always have the most current versions of firmware on your system.
NetApp Downloads: Disk Shelf Firmware
NetApp Downloads: Disk Drive and Firmware

Note: Do not revert firmware to a version that does not support the disk shelves, disk shelf FRU components, or SAS cables in your system.

About this task
How you hot-swap the disk depends on how the disk drive is being used. By using the correct procedure, you can prevent unwanted AutoSupport notifications from being generated. Depending on your context, disk drives with Storage Encryption might require additional steps before and after the hot-swap.

ONTAP 9 Disks and Aggregates Power Guide
ONTAP 9 NetApp Encryption Power Guide

When replacing several disk drives, you must wait one minute between the removal of each failed disk drive and the insertion of the replacement disk drive to allow the storage system to recognize the existence of each new disk.

Note: Always use two hands when removing, installing, or carrying a disk drive.

Steps
1. Properly ground yourself.
2. Gently remove the bezel from the front of the system.
3. Identify the failed disk drive from the system console warning message and the illuminated fault LED on the disk drive.
4. Press the release button on the disk drive face.
   Depending on the storage system, the disk drives have the release button located at the top or on the left of the disk drive face.
   For example, the following illustration shows a disk drive with the release button located on the top of the disk drive face:
The cam handle on the disk drive springs open partially and the disk drive releases from the midplane.

5. Pull the cam handle to its fully open position to unseat the disk drive from the midplane.

6. Slide out the disk drive slightly and allow the disk to safely spin down, which can take less than one minute, and then, using both hands, remove the disk drive from the disk shelf.

7. With the cam handle in the open position, insert the replacement disk drive into the disk shelf slot, firmly pushing until the disk drive stops.

   **Note:** Wait a minimum of 10 seconds before inserting a new disk drive. This allows the system to recognize that a disk drive was removed.

   **Note:** Use two hands when inserting the disk drive, but do not place hands on the disk drive boards that are exposed on the underside of the disk carrier.

8. Close the cam handle so that the disk drive is fully seated into the midplane and the handle clicks into place.

   Be sure to close the cam handle slowly so that it aligns correctly with the face of the disk drive.

9. If you are replacing another disk drive, repeat Steps 3 through 8.
10. Reinstall the bezel.

11. Return the failed part to NetApp, as described in the RMA instructions shipped with the kit.

   Contact technical support at NetApp Support, 888-463-8277 (North America), 00-800-44-638277 (Europe), or +800-800-80-800 (Asia/Pacific) if you need the RMA number or additional help with the replacement procedure.

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- NetApp, Inc., 495 East Java Drive, Sunnyvale, CA 94089 U.S.
- Telephone: +1 (408) 822-6000
- Fax: +1 (408) 822-4501
- Support telephone: +1 (888) 463-8277