



Hewlett Packard
Enterprise

HPE MSA 1060/2060/2062 Drive Replacement Instructions

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Before you begin

- Before proceeding with drive replacement, check the following:
 - Confirm that the drive is a member of a fault-tolerant configuration that permits removing one or more drives without risking data loss.
 - If multiple drives have failed and need replacing, determine how many drives can be replaced at the same time. The number of drives that can fail and be replaced without data loss is determined by the fault-tolerance level of the configuration.
- Leave failed modules in the enclosure until you are ready to install the replacement module. Removing a module from an operational enclosure significantly changes air flow within the enclosure. Openings must be populated for the enclosure to cool properly.
- Parts can be damaged by electrostatic discharge. Keep parts in electrostatic containers until needed and ensure you are properly grounded when touching static-sensitive components.
- Use care when handling drives. Drives are sensitive electromechanical devices that can be permanently damaged through improper handling. Keep drives in their original, protective packaging until installation.
- The replacement drive module must be of the same type, and possess capacity equal to or greater than the one being replaced.
- For additional information on replacing drives, see the Hewlett Packard Enterprise website documentation listed under Resources.

Verifying drive status

Before and after replacing a drive, determine its status as follows:

Procedure

- Check notifications, array system event logs, product-specific logs, and management utilities for drive health and location information.
- Check enclosure status LEDs.
- Check drive LEDs, as described in the following images and table.



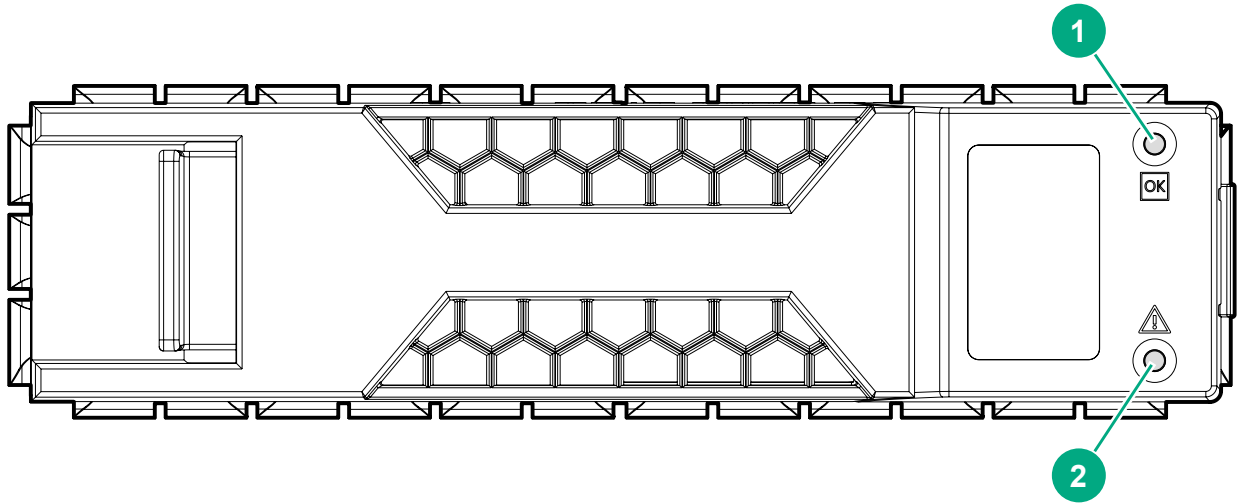


Figure 1: LFF drive

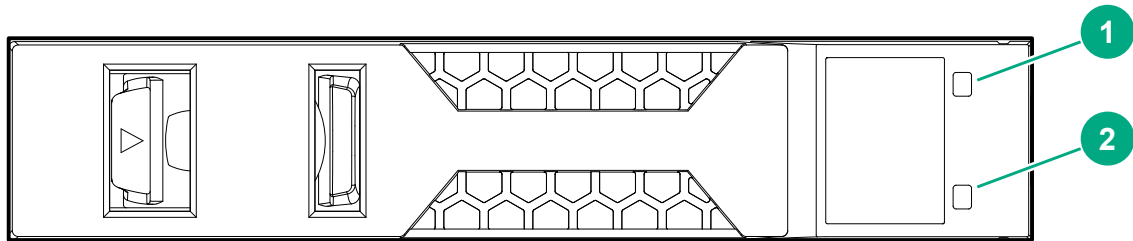


Figure 2: SFF drive

Table 1: Drive LED descriptions

1	Online / Activity	Off	Power off or drive not currently in use.
		On / Blinking	Drive activity.
2	Fault LED	Off	OK drive status.
		On	Drive faulted.
		Blink (1 sec on / 1 sec off)	RAID set reconstructing.
		Blink (3 sec on / 1 sec off)	Drive has been identified by management application (SMU or CLI)



Removing the failed drive

CAUTION: Prolonged use of the array, while one or more drives slots are not covered by either a drive or drive blank module, can result in damage to the system from overheating.

Procedure

1. If you have a bezel, remove it to access drives.
2. Press the drive latch.

IMPORTANT: For drives with rotating media, wait approximately 30 seconds or until the media stops rotating before removing the drive from the enclosure.

3. Pivot the release lever to the full open position.
4. Pull the drive out from the enclosure.

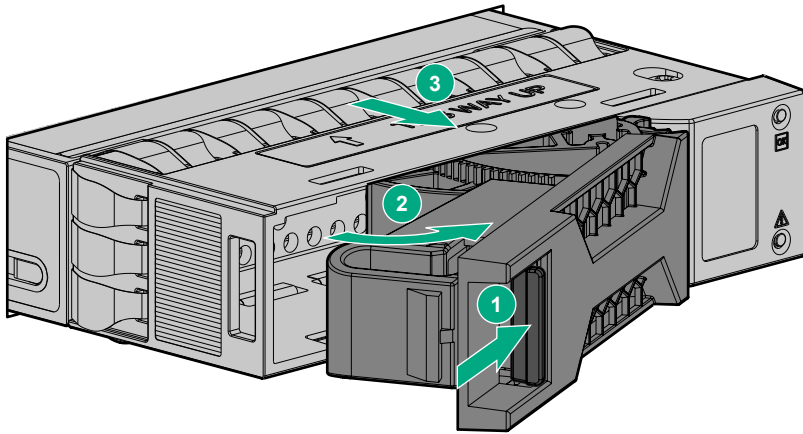


Figure 3: LFF drive

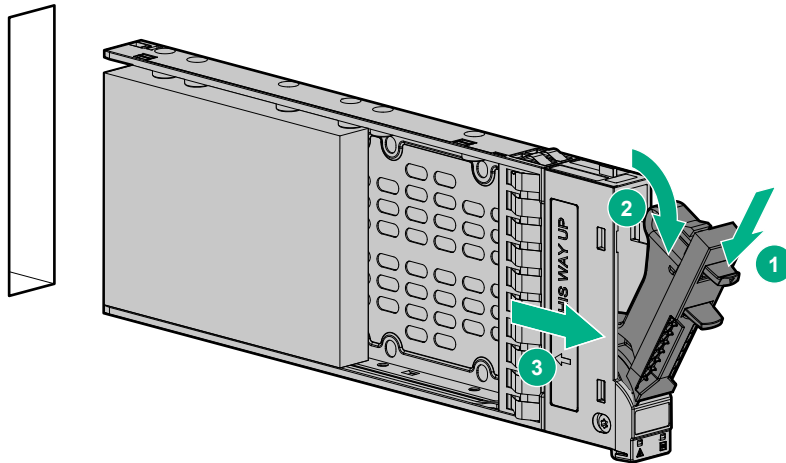


Figure 4: SFF drive



Installing the replacement drive

Prerequisites

- CAUTION:** Wait approximately 60 seconds after removing the failed drive before installing the replacement drive. This amount of time allows the enclosure to recognize that a drive was removed. Removal of a drive prepares the enclosure to recognize a replacement drive when it is installed.

Procedure

1. On the replacement drive, prepare the drive by pressing the drive latch (1) and pivoting the release lever (2) to the full open position.

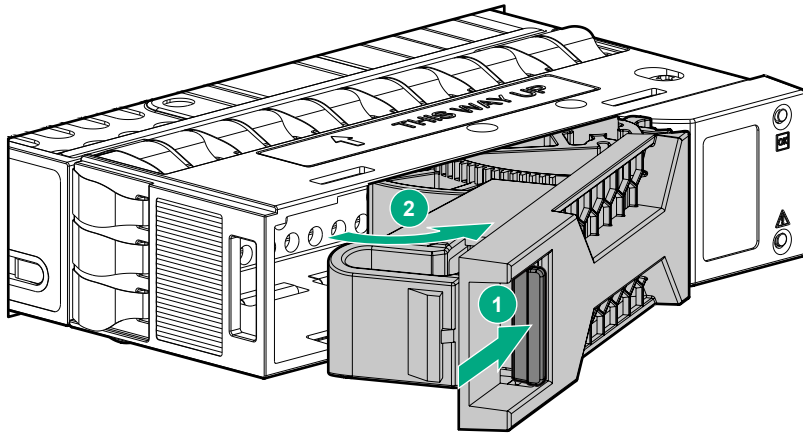


Figure 5: Opening the lever on an LFF drive

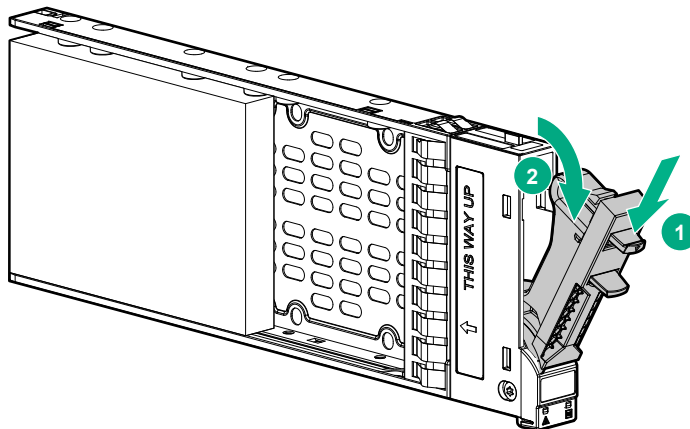


Figure 6: Opening the lever on an SFF drive

2. Insert the replacement drive into the drive enclosure (1), sliding the drive into the drive enclosure as far as it will go. As the drive meets the backplane, the release lever (2) automatically begins to rotate closed.
3. Press firmly on the release lever to ensure that the drive is fully seated.



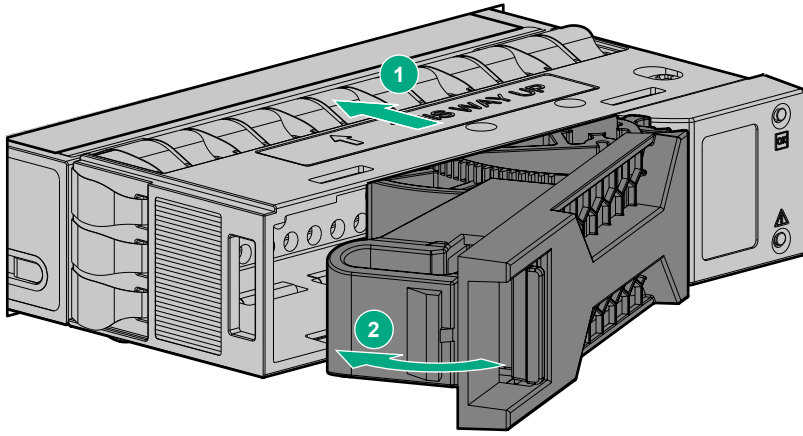


Figure 7: LFF drive

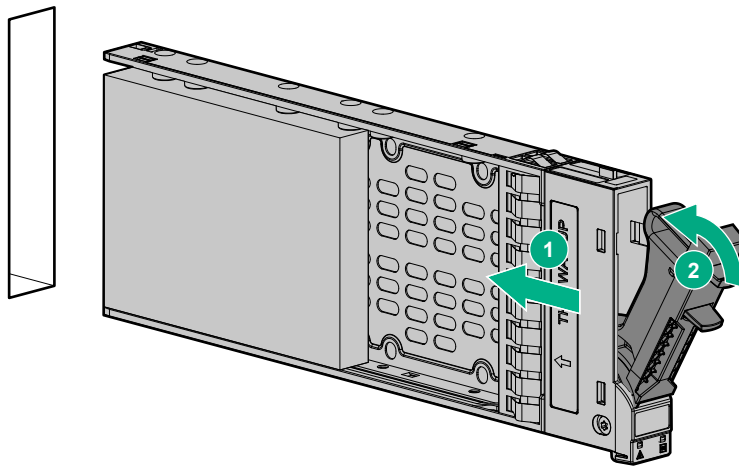


Figure 8: SFF drive

4. Reattach bezel if previously installed:
 - a. Insert tab on right side of bezel into slot on enclosure.
 - b. Press left side of bezel until it locks into place.
5. Wait approximately 30 seconds for the system to discover the drive.
6. Go to the SMU or CLI and confirm that the drive is available for use.

NOTE: In an FDE-secured system, any drive that does not already have disk group information is automatically secured using the system lock keys. See *HPE MSA 1060/2060/2062 Storage Management Guide* and *HPE MSA 1060/2060/2062 CLI Reference Guide* for instructions on including or repurposing Self-Encrypting Drives (SEDs) that have existing disk group metadata.



Verifying drive status

Procedure

Follow the instructions in [Verifying drive status](#).

Working with failed drives, spares, and replacement drives

When dynamic sparing is enabled and a drive fails in a fault-tolerant disk group, if compatible drives are available, the storage system automatically uses the drives to reconstruct the disk group. As disk group reconstruction does not require I/O to be stopped, the disk group can continue to be used while the reconstruct utility runs. If dynamic sparing is not enabled, you must manually set a compatible drive as a spare for the rebuild to start.

When a failed drive is rebuilt onto a spare, the spare becomes the new drive in the disk group, and the original drive that failed is unused and is no longer part of the disk group.

To make the replacement drive available for use as a spare, perform the following actions:

Procedure

1. In the SMU, verify the status of the drive slot in which the replacement drive is installed is available (AVAIL). All new drives should be Available. If the status is a different value, see the user guides or guided troubleshooting listed under [Websites](#), and determine the appropriate action.
2. When the replacement drive is online with a status of available (AVAIL), verify that your firmware is up to date. If you need to update the firmware to the latest version, see [Updating firmware](#).
3. Configure the drive to be a spare.
 - To add a spare using the SMU:
 - a. In the **MAINTENANCE** > **Storage** topic, select **ADD SPARE DISKS**.
 - b. In the Add Spares dialog, select the disk.
 - c. Click **ADD SPARE DISKS**. The system updates the global spares and a confirmation panel displays.
 - d. To close the confirmation panel, click **OK**.
 - To add a spare using the CLI, use the `add spares` command.

Example showing how to designate disk 1.2 as a global spare:

```
# add spares 1.2
```

NOTE: Spare drives and replacement process may differ with advanced RAID levels. Refer to *HPE MSA 1060/2060/2062 Storage Management Guide* if the process is not reporting as expected, and you are using advanced RAID Levels.

For information about disk group reconstruction and using the SMU, see the Hewlett Packard Enterprise documentation website listed under [Websites](#).

Updating firmware

After installing any new component, verify that it is running the latest firmware.



Procedure

1. Go to the MSA Drive Firmware download website: <https://www.hpe.com/storage/MSADriveFirmware>.
2. If newer firmware is available, download the firmware to your local system and install the latest version on the drive.

For more information on firmware updates, see the applicable *HPE MSA 1060/2060/2062 Storage Management Guide*, *HPE MSA 1060/2060/2062 CLI Reference Guide*, or product user guide listed under [Websites](#).

Returning the failed component

In materials shipped with the replacement, Hewlett Packard Enterprise specifies whether the failed component must be returned. Follow the provided instructions.



Websites

GENERAL WEBSITES

Hewlett Packard Enterprise Information Library

www.hpe.com/info/EIL

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

www.hpe.com/storage/spock

HPE Support

<https://support.hpe.com/hpesc/public/home/>

Storage white papers and analyst reports

www.hpe.com/storage/whitepapers

MSA WEBSITES

MSA QuickSpecs

<http://www.hpe.com/info/qs>

MSA Manuals

<https://www.hpe.com/info/MSAdocs>

MSA Firmware

<https://www.hpe.com/storage/MSAFirmware>

MSA Drive Firmware

<https://www.hpe.com/storage/MSADriveFirmware>

HPE MSA Support Material Access

<http://www.hpe.com/storage/MSASupportMaterialAccess>

MSA Health Check

www.hpe.com/storage/MSAHealthCheck



Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:
<http://www.hpe.com/info/assistance>
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:
<http://www.hpe.com/support/hpesc>

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

Hewlett Packard Enterprise Support Center

www.hpe.com/support/hpesc

Hewlett Packard Enterprise Support Center: Software downloads

www.hpe.com/support/downloads

Software Depot

www.hpe.com/support/softwaredepot

- To subscribe to eNewsletters and alerts:
www.hpe.com/support/e-updates
- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:
www.hpe.com/support/AccessToSupportMaterials





IMPORTANT: Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Passport set up with relevant entitlements.

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider.

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

Remote support and Proactive Care information

HPE Get Connected

www.hpe.com/services/getconnected

HPE Proactive Care services

www.hpe.com/services/proactivecare

HPE Proactive Care service: Supported products list

www.hpe.com/services/proactivecaresupportedproducts

HPE Proactive Care advanced service: Supported products list

www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information

Proactive Care central

www.hpe.com/services/proactivecarecentral

Proactive Care service activation

www.hpe.com/services/proactivecarecentralgetstarted

Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

www.hpe.com/support/Networking-Warranties



Regulatory information

To view the regulatory information for your product, view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the Hewlett Packard Enterprise Support Center:

www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

www.hpe.com/info/environment

Documentation feedback

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