SEAGATE

RAID Manager User Manual

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Welcome to RAID Manager

Created specifically for LaCie professional RAID storage devices,**RAID Manager** helps you configure arrays, measure array health and more.

RAID Manager currently supports LaCie 8big Pro5.

- For common questions and answers about RAID Manager, please seeFrequently Asked Questions.
- Get the latest updated technical information about your device atwww.seagate.com/raid-manager.

Get Started

Download and install RAID Manager to manage supported RAID devices. For device-specific setup — such as how to connect your drive, supported operating systems, and drive formatting — refer to the user manual for your product.

Requirements

Professional storage

- LaCie 8big Pro5

Supported operating systems

- macOS: macOS 15 (Sequoia) or later.
- Windows: Windows 11 24H2 or later.

For the latest compatibility details, see LaCie 8big Pro5 Compatibility.

Install RAID Manager

1. Go to www.seagate.com/raid-manager.
2. Download the installer for your operating system.
3. Launch the installer and follow the onscreen prompts to complete installation.
4. When installation is complete, open RAID Manager.

See the user manual for your product for instructions on connecting your drive and details regarding drive formats.

Device	Factory configuration	User manual
LaCie 8big Pro5	RAID 5	Click here

macOS — RAID Manager installs a driver to allow for device detection. If you are experiencing detection issues, check that the LaCie driver extension (DEXT) is enabled. To enable the driver:

1. Open **System Settings**.
2. Select **General**, then navigate to **Login Items & Extensions**.
3. Under **Extensions**, locate **LaCie Driver Installer** .
4. Click the Info icon and enable the LaCie driver.
5. Enter administrator credentials when prompted.
6. Restart the computer if required.

Once the driver extension is enabled in macOS, your device should be recognised as a storage device.

RAID Concepts and Terminology

Learn common RAID concepts and the terms used in RAID Manager and this user manual.

Key concepts

- **RAID** (Redundant Array of Independent Disks) combines multiple physical drives into one logical storage unit (an **array**).
- Different **RAID levels** determine how data is distributed across drives and how much protection you have if a drive fails. RAID levels are typically a tradeoff between three goals:

    - **Capacity** — How much usable space you get.
    - **Performance** — How fast data can be read and written.
    - **Protection** — How many drive failures the array can tolerate before before there is potential for data loss.

- Some RAID levels use striping with no redundancy to prioritise performance and capacity over data protection. There are also RAID levels that provide critical data protection using parity or mirrored copies of data.

Terminology

Configuration

Term	Meaning
Array	A combination of two or more physical drives presented to the operating system as a single volume. In many contexts, “array” is used to mean a virtual disk (vdisk). Note — Although an array is presented as a single volume, it can be partitioned by the operating system disk utility into multiple volumes, each of which may be formatted differently. Operating system disk utilities are Disk Utility (macOS) and Disk Management (Windows).
RAID	“RAID” contains the word “array,” and the two terms are often used interchangeably in user-facing documentation.
RAID level	The method used to distribute and protect data across the drives in an array (for example, RAID 0, RAID 1, RAID 5, RAID 6, RAID 10, RAID 50, RAID 60).

Striping	Data is split into blocks and written across multiple drives to improve performance. RAID 0 uses striping with no parity or redundancy.
Stripe	A single repeating data block layout pattern used by striped RAID.
Stripe size	The amount of data (typically measured in KB) written to one drive before the controller moves to the next drive in the array. Larger stripe sizes generally suit large, sequential transfers (video, audio, graphics), while smaller stripe sizes can suit smaller, mixed workloads.
Parity	Extra information calculated from data that enables recovery after a drive failure. RAID 5 uses one parity block (“P”) that rotates across drives; RAID 6 adds a second parity (“Q”) for additional protection.
Mirror/mirroring	Two drives contain identical data. With RAID 1, reads can be serviced from either drive; writes go to both.
Spare drive	A drive designated to take over for a failed drive so the device's system can immediately rebuild an array to maintain data redundancy. While a spare drive is very helpful for immediately replacing a failed drive, it remains in reserve and cannot be used to store data. As a result, a spare drive is optional and must be explicitly created. Spare — A spare drive dedicated to a single array. Global spare — A spare drive that can be used by any array on the device. Recommended for devices with multiple arrays.

Operations and health

Term	Meaning
Initialisation	A process that prepares an array and can help prevent errors when handling data.
Background initialisation	Background initialisation is a check for media errors on the drives when creating an array. This check ensures that striped data segments are the same on all of the drives in the array.
Foreground initialisation	An initialisation that completes faster because it requires the device to be disconnected from the host. The device cannot be used for data operations during a foreground initialisation.

Rebuild	The process of restoring redundancy after a drive failure. When a replacement drive takes over for a failed drive, the redundant data is rebuilt on the new drive. Array performance may be affected during a rebuild. Note — A rebuild can also occur if drives are swapped from their original bays. To avoid unnecessary rebuilds, do not move drives from their original bays.
Degraded	A condition where an array has reduced protection and may have reduced performance.
Consistency check	A maintenance operation that tests the integrity of parity data.

> **!** Operations such as initialisation and rebuild can affect performance and data protection. Always back up important files before making changes to an existing array.

Summary of RAID levels

Use the table below as a quick overview of what each RAID level is designed to do. For more detailed descriptions of available RAID levels, seeRAID Levels.

RAID level	Summary
RAID 0 (striping)	Stripes data across drives for performance and capacity with no redundancy.
RAID 1 (mirroring)	Writes identical data to two drives for protection.
RAID 5	Stripes data with rotating parity and survives one drive failure.
RAID 6	Stripes data with rotating parity and survives up to two drive failures.
RAID 10	A stripe of mirrored pairs.
RAID 50	A stripe of RAID 5 sets.
RAID 60	A stripe of RAID 6 sets.

RAID Levels

RAID levels differ in performance, usable storage capacity, and data-protection capabilities, depending on the selected configuration and the number of drives in the array. Review the summaries for each RAID level before selecting a configuration for your device.

For RAID configuration instructions, see the Configure and Manage Arrays.

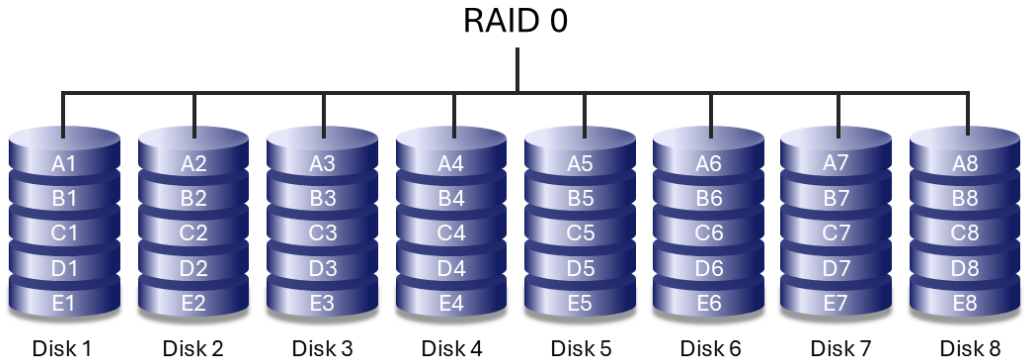
Minimum/Maximum Drives: 8big Pro 5

RAID level	Min. drives	Max. drives	Notes
RAID 0	2	8	
RAID 1	2	2	Only two drives are supported for a RAID 1 array.
RAID 5	5	8	A minimum of five drives are required to allow for background initialisation as an option.*
RAID 6	7	8	A minimum of seven drives are required to allow for background initialisation as an option.*
RAID 10	4	8	Requires an even number of drives (four, six, or eight).
RAID 50	6	8	Requires an even number of drives (six or eight). Can only be created via foreground initialisation.*
RAID 60	8	8	Can only be created via foreground initialisation.*

* To better understand the difference between a background initialisation and a foreground initialisation, see Create an array.

Standard RAID levels

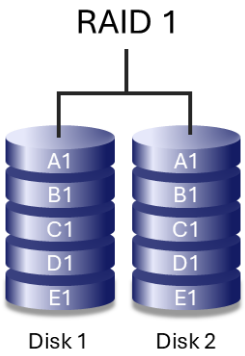
RAID 0



RAID 0 provides the highest sequential performance by writing data across all drives in the array (striping). The usable storage capacity equals the combined capacity of all drives.

RAID 0 does **not** provide data protection. If a single drive fails, all data in the array is lost. RAID 0 is best suited for temporary or non-critical data where performance is the primary requirement and data can be restored from another source.

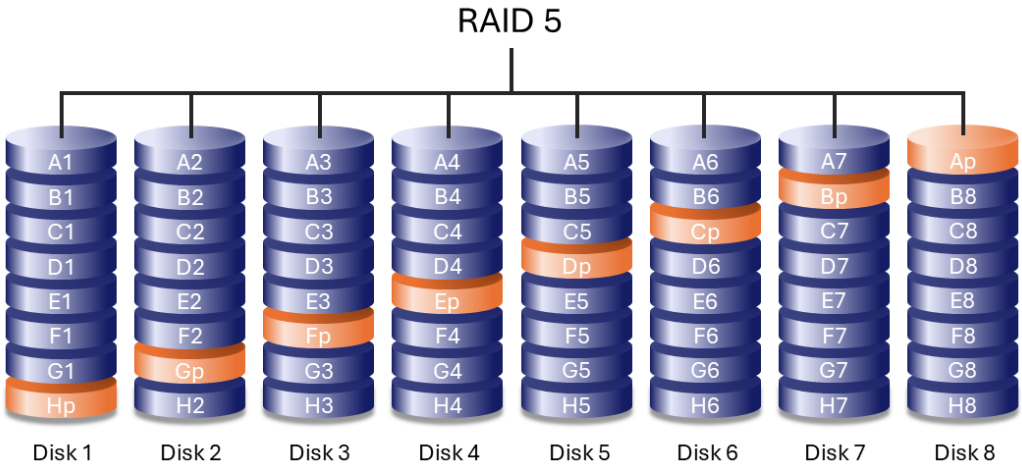
RAID 1



RAID 1 mirrors data between two drives, providing enhanced data protection. If one drive fails, data remains available on the remaining drive.

Because all data is written to both drives, usable storage capacity is reduced by 50%. Write performance is lower than RAID 0, due to the time it takes to write data multiple times. RAID 1 is supported only with two drives and cannot be expanded.

RAID 5



RAID 5 writes data across all drives in the array and distributes parity information among them. If one drive fails, the array continues to operate and the missing data can be rebuilt onto a replacement drive.

If a second drive fails before the rebuild process completes, data in the array is lost.

> **i** Although some RAID devices support RAID 5 with as few as three drives, RAID Manager requires a minimum of five drives to ensure expected performance and to allow the option of background initialisation. To better understand the difference between a background initialisation and a foreground initialisation, see Create an array.

RAID 5 performance can approach that of RAID 0 while providing protection against a single drive failure. Usable capacity is calculated by multiplying the capacity of the smallest drive by the total number of drives in the array, minus one:

Smallest drive capacity × (*Total number of drives* − 1)

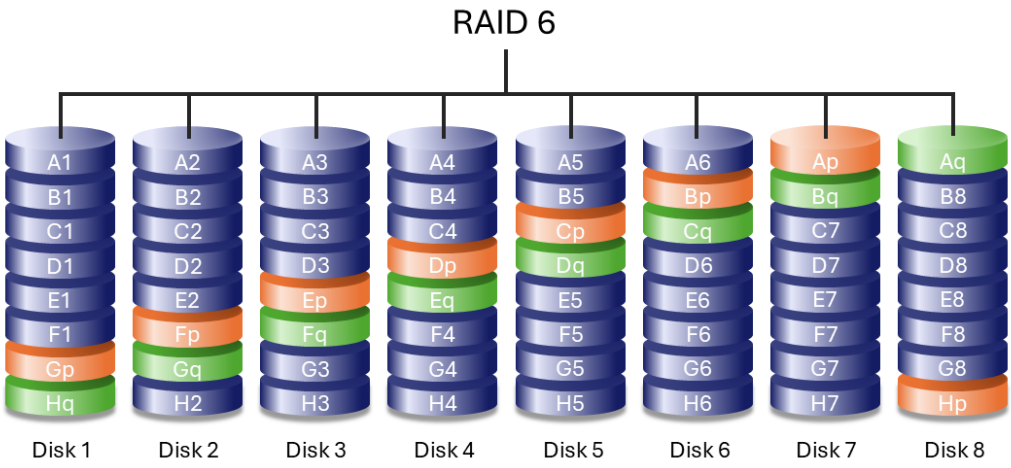
Example 1: An array is assigned five 8 TB drives for a total of 40 TB. The equation is:

8 TB x 4 = 32 TB

Example 2: An array is assigned four 16 TB drives and one 24 TB drive for a total of 88 TB. The equation is:

16 TB x 4 = 64 TB

RAID 6



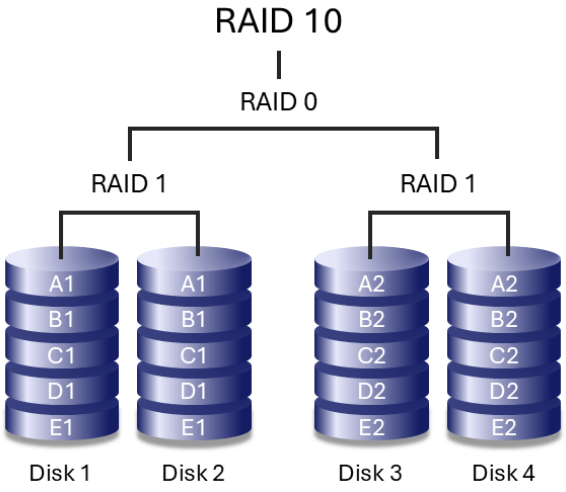
RAID 6 writes data across all drives in the array and stores two sets of distributed parity information. This configuration allows the array to withstand the failure of up to two drives without data loss.

Rebuilding data after a drive failure is slower than RAID 5 due to the additional parity calculations, but RAID 6 provides significantly greater protection for large-capacity arrays.

> **i** Although some RAID devices support RAID 6 with as few as four drives, RAID Manager requires a minimum of seven drives to ensure expected performance and to allow the option of background initialisation. To better understand the difference between a background initialisation and a foreground initialisation, see Create an array.

Nested RAID levels

RAID 10

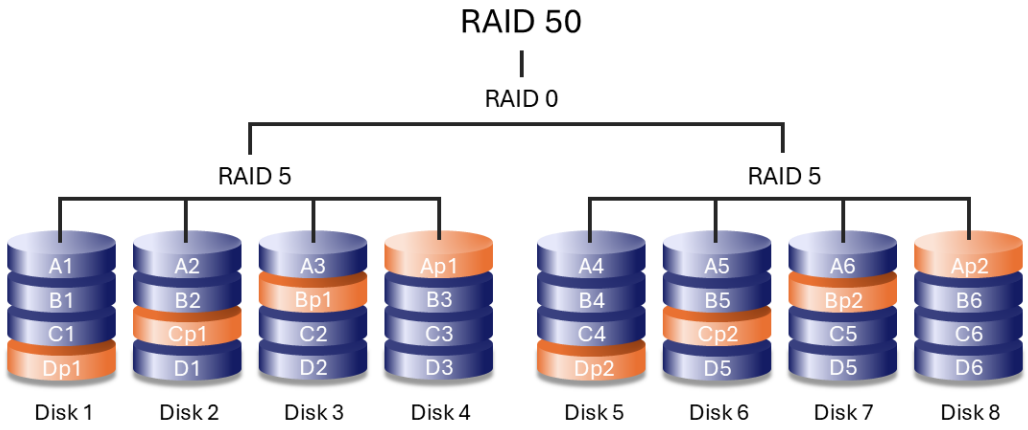


RAID 10 combines the data protection of RAID 1 with the performance benefits of RAID 0. The array is composed of mirrored pairs of drives that are then striped together.

RAID 10 can tolerate the failure of one drive in each mirrored pair, as long as both drives in the same

mirror do not fail simultaneously. This configuration provides strong data protection and high performance, particularly for workloads that involve frequent access to many small files and benefit from higher input/output operations per second (IOPS).

RAID 50

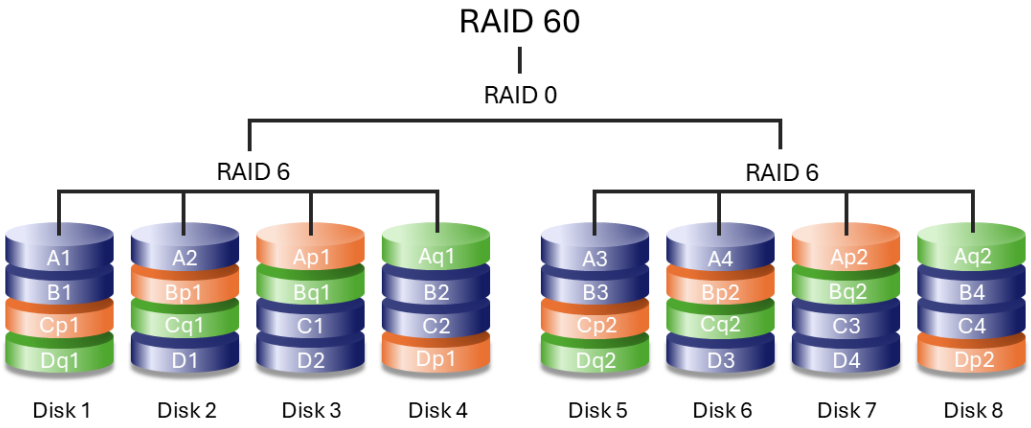


RAID 50 combines RAID 0 striping with RAID 5 parity by striping data across multiple RAID 5 groups. This configuration improves write performance compared to RAID 5 while offering greater fault tolerance than a single RAID level.

A minimum of six drives is required. Arrays with a large number of drives may take longer to initialise and rebuild due to increased capacity.

RAID 50 can only be created using foreground initialisation. During foreground initialisation, your device must be disconnected from the host computer. For details, see th Create an array.

RAID 60

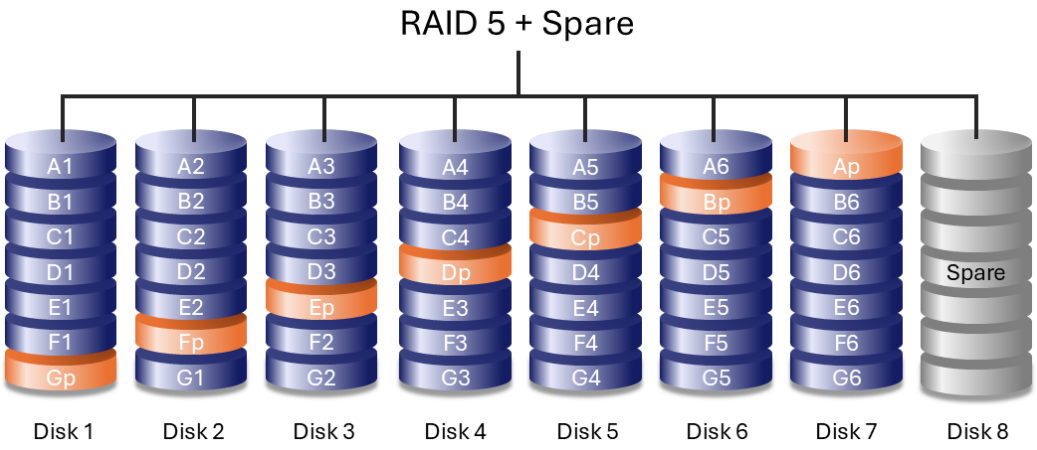


RAID 60 combines RAID 0 striping with RAID 6 double parity by striping data across multiple RAID 6 groups. This configuration offers improved performance compared to RAID 6 while providing high fault tolerance.

A minimum of eight drives is required. Because RAID 60 arrays use a large number of drives, initialisation and rebuild operations take longer than with standard RAID levels.

RAID 60 can only be created using foreground initialisation. During foreground initialisation, your device must be disconnected from the host computer. For details, see the Create an array.

RAID + Spare



A RAID + Spare configuration includes a reserved drive that automatically replaces a failed drive. When a drive fails, data synchronisation to the spare begins immediately, reducing the time the array operates in a degraded state. Arrays with redundancy that do not include a spare must wait for a replacement drive to start before synchronisation.

- The spare drive is not available for data storage during normal operation (all drives in the array are in a healthy state).
- After synchronisation is complete, the spare acts as a member of the array until the failed drive is replaced by a new drive. Upon inserting the new drive, the RAID controller performs a copyback operation in which the data is copied to the replacement drive. The spare drive then resumes its role as the spare.
- Both dedicated and global spare drives are supported. A dedicated spare is a drive assigned to take over for a failed drive so the device's system can immediately rebuild the array to maintain data redundancy. A global spare is a drive that can be used by any array on the device.

For more details, see Assign a spare drive.

Drive failures and synchronising a spare drive

For RAID + Spare arrays, data remains intact when the minimum number of redundant drives fail. However, if an additional drive fails before or during data synchronisation with the spare, data in the array is lost. See the examples below.

- **RAIDs 1 and 5** — One drive has failed and the array synchronises with the spare drive. If a second drive in the RAID 1 or RAID 5 array fails before synchronisation is complete, all data in the array is lost.
- **RAID 6** — Two drives have failed and the array synchronises the first failed drive with the spare. If a third drive in the RAID 6 array fails before synchronisation is complete, all data in the array is lost.
- **Nested RAID** — Nested RAID levels have greater fault tolerances depending upon which of the nested RAID arrays have drives that fail.

- **RAIDs 10 and 50** — Each of the nested arrays can lose one drive. If one of the two nested arrays loses two drives before or during the synchronisation, data is lost.
- **RAID 60** — Each of the nested arrays can lose two drives. If one of the two nested arrays loses three drives before or during the synchronisation, data is lost.

Configure and Manage Arrays

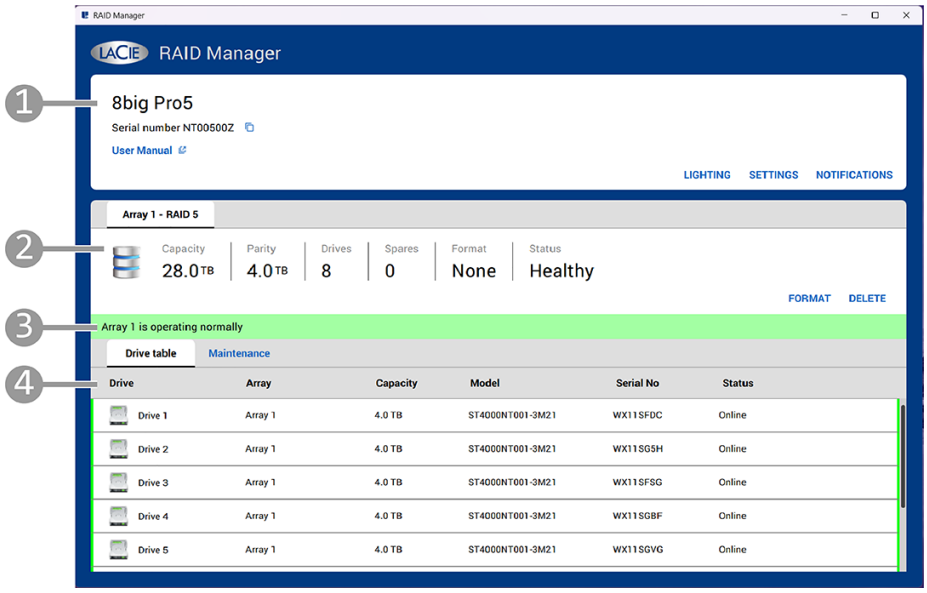
Use RAID Manager to view, create, delete and maintain RAID arrays.

Before you begin

- **Back up your data first.** Actions such as deleting an array, changing RAID configuration, and formatting can permanently remove files.
- **Make sure the device is detected in RAID Manager.** You should see the device name at the top of the screen.

View arrays

Use the Home screen to review the configuration and health of configured arrays.



1. Device card
2. Array card
3. Status bar
4. Drive card

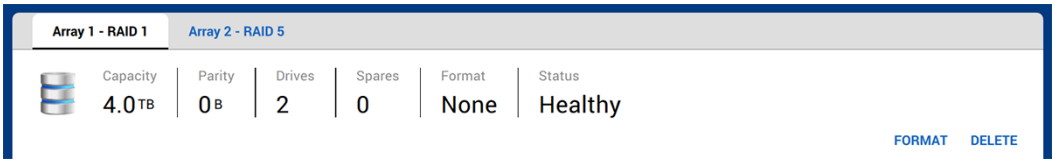
Device card

The **device card** identifies the connected device by serial number and provides device-level configuration controls.

Attribute	Description
SerialNumber	The device's serial number. Select the Copy icon if you need to copy the serial number to your clipboard.
User Manual link	Select the link to open the device's user manual in a web browser.
Actions	Available device-level actions include LIGHTING, SETTINGS and NOTIFICATIONS.

Array card

The **array card** identifies an array (by number) and its RAID configuration. The array card will display an **array tab** for each array configured on the device.

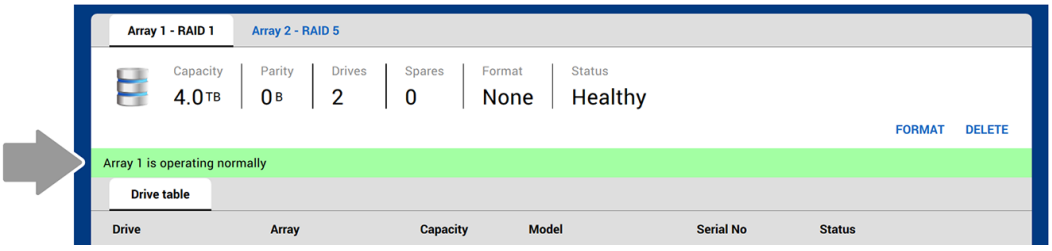


Attribute	Description
Capacity	Usable storage capacity available on the array.
Parity	Capacity reserved for redundancy (shown for parity-based RAID levels).
Drives	Number of drives included in the array.
Spares	Number of spare drives assigned to the array, if any.

Attribute	Description
Format	File system format shown for the array: **None** — The array has not been formatted with a file system, or it has been formatted with a file system that is not recognised by the computer's operating system. **APFS** — The array is formatted as APFS (macOS). **NTFS** — The array is formatted as NTFS (Windows). **exFAT** — The array is formatted as exFAT. This format appears only if the array was formatted outside of RAID Manager. **HFS+** — The array is formatted as HFS+. This format appears only if the array was formatted outside of RAID Manager. **Multiple** — The array is composed of at least two partitions with different formats.
Status	Overall health of the array. Possible states include: **Healthy** — The virtual drive operating condition is good. All configured drives are online. **Partially Degraded** — The array is operating with reduced redundancy but can still tolerate another drive failure. This state typically occurs in a RAID 6 configuration after one drive has failed. Performance may be reduced, but data remains protected. **Degraded** — The array's performance is degraded. The array has lost its redundancy and can no longer tolerate an additional drive failure. This state typically occurs in a RAID 5 configuration after one drive has failed, or in a RAID 6 configuration after two drive failures. Performance is reduced, and data is at risk until the failed drive is replaced and the array is rebuilt. **Offline** — The array is not currently available or array data is lost. Note — With unexpected host connections (for example, viewing a volume on an operating system that does not support its file system), RAID Manager may display an incorrect or generic format designation.
Actions	Available array-level actions (depending on array state) include FORMAT and DELETE.

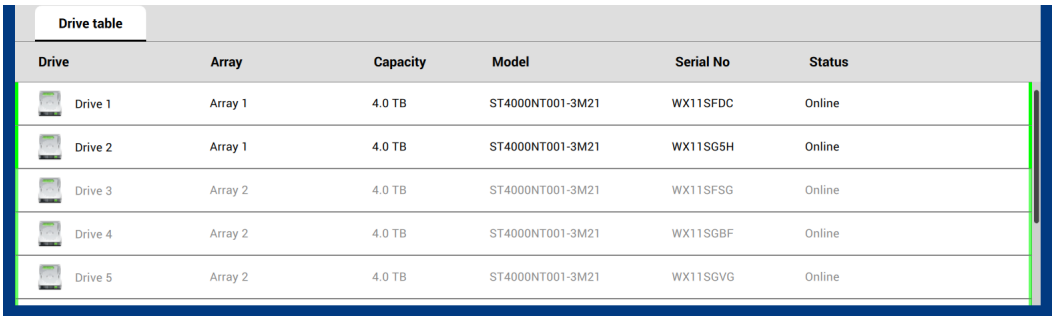
Status bar

The **status bar** displays system messages related to the connected device, such as array conditions, drive changes and RAID Manager operations.



Drive card

The **drive table** tab lists each drive in the device and shows drive-level identifiers and health.



Attribute	Description
Drive	Drive number (for example, Drive 1).
Array	Drive's relationship to an array. Possible values: Array (number), Array (number) spare, or Global spare.
Capacity	Drive capacity as recognised by RAID Manager.
Model	Drive model identifier.
Serial No	Drive serial number.
Status	Drive health/availability state. See Drive status values below.

Drive status values

Value	Description
Copying data	RAID Manager is copying data from a spare back to the replaced drive to restore the array to its original configuration. This occurs after the rebuild to a spare has completed and the failed drive has been replaced.
Failed	Drive was online or configured as a spare, but the firmware detects an unrecoverable error.
Missing	Drive was online but is no longer detected in its bay.
Offline	Drive is part of an array, but contains data that is invalid for the RAID configuration.
Online	Drive can be accessed by the RAID controller and is part of the array. Drive is operating normally. (This status can also appears for dedicated and global spares.)

Value	Description
Rebuilding	Data is being written to the drive to restore full redundancy for an array.
Diagnostic in progress	An interim state of a physical drive for diagnostic operations.
Unconfigured bad	Firmware detects an unrecoverable error on the drive. The drive was originally Unconfigured Good or the drive could not be initialised.
Unconfigured	Drive is functioning normally but is not configured as a part of an array or as a spare.
Unconfigured (Foreign)	Drive is functioning normally and contains RAID configuration information from an existing array that is not currently recognised by RAID Manager. For example, the drive was moved from another system or the drive is part of an array but was removed from its bay and reinserted while the device was powered on.

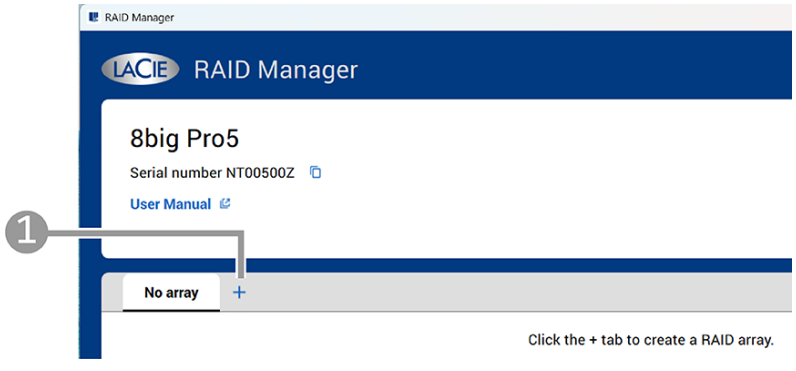
Create an array

You can choose a different RAID level to optimise performance or for additional data protection, depending on your working environment. Before creating an array, review RAID Levels to determine which RAID level best suits your needs.

> **!** Creating a RAID array deletes all files stored on the drives. Make sure that any files you want to keep are backed up before creating an array.

RAID Manager provides a guided flow to create a new array and select a RAID level.

1. On the Home screen, in the array card, select the **Add (+)** button.



2. Select the tab with the RAID level you want to create.
3. Select the drives to include in the array.
4. Select **CONTINUE**.

5. In the confirm configuration dialog, select the initialisation type. (Available options depend on the selected RAID level. See below.)
6. (Optional) Select the checkbox to have RAID Manager format the drives. By default, RAID Manager formats as APFS on macOS and NTFS on Windows.

> To format the array with another file system such as exFAT or HFS+, use Disk Utility on macOS or Disk Management on Windows.

7. Select **CONFIRM** to start the operation.

RAID levels requiring initialisation

In RAID Manager, **initialise** refers to a RAID-level operation required only when creating or changing parity-based RAID configurations.

> In macOS and Windows operating systems, the term **initialize** refers to preparing a disk for use by creating a file system, also known as **formatting the storage**.

Initialisation is required for parity-based RAID levels, such as:

- RAID 5
- RAID 6
- RAID 50
- RAID 60

These RAID levels must be initialised using background or foreground initialisation.

The following RAID levels do not require initialisation:

- RAID 0
- RAID 1
- RAID 10

Foreground and background initialisation

For parity-based RAID levels, you can choose between two initialisation methods:

- **Foreground initialisation** is potentially faster than a background initialisation, but the device must be disconnected from the host computer while the initialisation runs. The device cannot be accessed during the foreground initialisation.
- **Background initialisation** is typically slower than a foreground initialisation but allows the device to be accessed and used while the initialisation runs.

The table below shows estimated foreground initialisation times based on array capacity. These estimates assume no user activity, since the device must be disconnected from the host computer during a

foreground initialisation. Estimates are provided for general guidance only — actual times may vary.

Capacity	Estimated Foreground Initialization Time
32 TB	6 hours
64 TB	12 hours
128 TB	24 hours
192 TB	30 hours
256 TB	40 hours

Background initialisation typically takes longer because the device remains connected and available for use. During this time, priority is given to user activity, such as accessing or transferring files, and the initialisation runs in the background. As a result, the overall duration depends on how actively the device is used while the initialisation is in progress.

The availability of foreground or background initialisation depends on the selected RAID level and configuration.

Foreground initialisation

When starting a foreground initialisation, RAID Manager prompts you to disconnect the device from the host computer. Foreground initialisation can only be performed when the device is not connected to the host.

- Reconnecting the device to the host computer while a foreground initialisation is in progress cancels the initialisation sequence. The initialisation must be restarted from the beginning.
- Ensure that the device is connected to a reliable power source during the entire process. If power is lost during a foreground initialisation, the initialisation must be restarted from the beginning.

The LEDs indicate foreground initialisation activity:

- System LED: Green/Off, breathing
- Drive LEDs: Green/Off, breathing

When the foreground initialisation completes:

- System LED: Light Blue, steady
- Drive LEDs: Light Blue, steady

> **!** Do not disconnect power during a foreground initialisation. Losing power will require the initialisation process to be restarted. Reconnect the device to the host computer only after the LEDs indicate that the foreground initialisation is complete (System and Drive LEDs are light blue and steady).

Background initialisation

During a background initialisation, the device remains usable with some limitations:

- The device can be safely ejected from the host computer and continues initialising as long as it remains powered on.
- The device can be disconnected and reconnected to the host computer while background initialisation is in progress.
- If the device is powered off during a background initialisation, the process resumes from where it left off when power is restored.

During background initialisation, expect reduced performance until the process completes.

The LEDs indicate background initialisation activity:

- System LED: Blue/Dark Blue, breathing
- Drive LEDs: Blue/Dark Blue, breathing

Format the storage

Select the **FORMAT** checkbox to have RAID Manager format the drives. RAID Manager uses the same operating system formatting mechanisms as the operating system's native disk management utilities.

> **i** By default, RAID Manager formats as APFS on macOS and NTFS on Windows. To format the array with another file system such as exFAT or HFS+, format the storage with a host computer disk utility.

See Format the storage below.

Delete an array

> **!** Deleting an array deletes all files stored on the array. Make sure that any files you want to keep are backed up before proceeding.

1. On the Home screen, in the array card, select **DELETE**.
2. A confirmation dialog appears. Review the warning and select **CONFIRM**.

Format the storage

Format the storage with RAID Manager

Select **FORMAT** on the array card to have RAID Manager format the drives. RAID Manager uses the same operating system formatting mechanisms as the operating system's native disk management utilities.

> **i** By default, RAID Manager formats as APFS on macOS and NTFS on Windows. To format the array with another file system such as exFAT or HFS+, format the storage with a host computer disk utility.

Format the storage with a host computer disk utility

You can also format the array using a disk utility on the host computer:

- Disk Utility on macOS
- Disk Management on Windows

For instructions on formatting your drive, see How to format your drive.

> **!** Formatting deletes all data on the array. Before formatting, make sure that any files you want to keep are backed up. If the array was newly initialised or the RAID level was changed, all previous data has already been erased as part of that process.

When formatting is required

Formatting is required whenever the structure of the storage array changes or when you want to apply a different file system. Common scenarios include:

- Changing the RAID level
- Replacing all drives in the array
- Preparing the device for use with a different operating system

Changing the RAID level deletes all data on the array and requires formatting before the array can be used again. Parity-based RAID levels will require initialisation before formatting.

Assign a spare drive

You can assign an available drive as a spare so it can automatically rebuild an array to maintain data redundancy. While a spare drive is very helpful for immediately replacing a failed drive, it remains in reserve and cannot be used to store data. As a result, a spare drive is optional and must be explicitly created.

Spare	A spare drive dedicated to a single array.
Global spare	A spare drive that can be used by any array on the device. Recommended for devices with multiple arrays.

1. On the Home screen, select the**Drive table** tab.
2. In the row for the available drive you want to use as a spare, select the More icon (three vertical dots).
3. Select one of the following options:
   - **Assign as spare**
   - **Assign as global spare**

Unassign a spare drive

You can unassign a spare drive and return it to the available pool.

1. On the Home screen, select the**Drive table** tab.
2. In the row for the spare drive, select the More icon (three vertical dots).
3. Select **Unassign drive**.

Run a consistency check

Consistency check verifies the accuracy of the data in virtual drives that use RAID levels 1, 5, 6, 10, 50 and 60. RAID 0 does not provide data redundancy. For example, in a system with parity, checking consistency means calculating the data on one drive and comparing the results to the contents of the parity drive.

While this operation is generally safe, there is a risk that some or all of your data can be lost, since repairing sector errors requires making changes to the array.

Array performance will be degraded while the consistency check is in progress.

A consistency check is not available when:

- Another disk activity is in progress.
- The array is degraded, broken, or only partially optimised.

Status LEDs

Adjust the brightness of the device's status LED and drive LEDs, and to view the LED colours, patterns, and states supported by the currently connected device.

1. From the Home screen, select **LIGHTING**.
2. To adjust status LED brightness, drag the **Status LED Brightness** slider left (dimmer) or right (brighter).
3. To adjust drive LED brightness, drag the **Drive LED Brightness** slider left (dimmer) or right (brighter).
4. To keep both brightness controls in sync, select **Synchronise Status and Drive Brightness**.
5. To view LED definitions for the connected device, select a tab:

    - **System LED State** — View the Colour, Pattern, and State shown for the system LED.
    - **Drive LED State** — View the Colour, Pattern, and State shown for the drive LEDs.

To close the window, select **X** in the top-right corner.

Settings

Change the app language, control whether anonymous usage data is shared, check for RAID Manager updates, and access licence and open-source information.

1. From the **Home screen**, select **SETTINGS**.
2. View the following:

Language	Shows the current language. Use the drop-down to select a different language.
Help LaCie improve your user experience	Use the toggle to allow or stop reporting **anonymous usage data**. This feedback helps improve RAID Manager and is always anonymous. Data is sent only when you are connected to the internet.
Updates	Shows the installed version and update status. Select **CHECK NOW** to check for updates.
About	Select the links to view the End User Licence Agreement and Open Source Attribution.

To close the window, select**X** in the top-right corner.

Notifications

Use the Notifications window to review recent events for the connected device (for example, maintenance activity or software update messages) and to download log files for troubleshooting.

1. From the Home screen, select **NOTIFICATIONS** on the device card.
2. Review the notifications listed in the window.

Notification entries	Each entry includes a description and a timestamp. Entry types include: Alert Warning Notification Information System status or activity
DOWNLOAD	Downloads all notifications as a CSV file, which can be shared with a Seagate customer support representative.
CLOSE or **X**	Closes the Notifications window.

Frequently Asked Questions

RAID initialisation and maintenance

Which RAID levels require initialisation?

Parity-based RAID levels (RAID 5, RAID 6, RAID 50, and RAID 60) require initialisation. RAID 0, RAID 1 and RAID 10 do not.

What's the difference between foreground and background initialisation?

A foreground initialisation completes faster but requires the device to be disconnected from the host computer and unavailable during the process.

A background initialisation runs more slowly but allows continued access to the device while it completes.

Does initialisation delete my data?

Yes. Creating and initialising a RAID array deletes all files stored on the drives. Always back up important files before creating an array.

Initialisation has been running for days. Has initialisation become stuck?

Not necessarily. With large-capacity drives and parity-based RAID levels, initialisation can take many days and, in some cases, more than a week — especially when using background initialisation.

Can I stop or pause an initialisation once it starts?

RAID Manager does not provide a way to manually pause or stop an initialisation.

If a foreground initialisation is interrupted, it must be restarted from the beginning.

A background initialisation automatically resumes if the device is powered off or disconnected, but it cannot be intentionally paused or resumed by the user.

Can I disconnect my computer during initialisation?

Yes, depending on the type of operation.

During background initialisation, the operation continues if the computer is disconnected and resumes automatically when power is restored.

During foreground initialisation, disconnecting the device or losing power interrupts the operation and requires it to be restarted from the beginning.

Formatting and file systems

When do I need to format the array?

Formatting is required when creating a new array, changing the RAID level, replacing all drives in an array, or preparing the device for use with a different operating system.

Does formatting erase all data on the array?

Yes. Formatting permanently deletes all data stored on the array.

Why does the array format show as “None”?

None indicates that the array is not currently formatted. In most cases, this means the array has been created but has not yet been formatted with a file system.

In rare cases, **None** may be displayed if RAID Manager cannot detect the array due to a hardware or software issue. Possible causes include a problem with the device’s internal electronics or with the RAID Manager driver.

To troubleshoot, power off the storage device, wait at least one minute, then power it back on and reconnect it to the host computer.

If the issue persists, shut down the host computer completely. After waiting about 30 seconds, restart the computer and reconnect the storage device.

Should I format the array using RAID Manager or my computer’s disk utility?

You can format the array using either RAID Manager or your operating system’s disk utility. RAID Manager uses the same underlying formatting mechanisms as the operating system.

By default, RAID Manager formats as APFS on macOS and NTFS on Windows. To format the array with

another file system such as exFAT or HFS+, format the storage with a disk utility:

- **macOS** — Disk Utility
- **Windows** — Disk Management

Array status and drive health

What does “Degraded” or “Partially Degraded” mean?

These states indicate reduced redundancy due to one or more drive failures. Data protection is limited until failed drives are replaced and the array is rebuilt.

What happens if a drive fails in my array?

If the selected RAID level provides redundancy, the array continues operating with reduced protection. Replacing the failed drive allows RAID Manager to rebuild the array and restore redundancy.

Note — If the failed drive is under warranty, you can check warranty status at www.seagate.com/warranty. Contact Seagate customer support atwww.seagate.com/supportfor information about drive replacement.

What is a consistency check, and when should I run one?

A consistency check recalculates and verifies parity data to ensure data integrity and can automatically repair certain parity-related errors. It is useful as periodic maintenance but may reduce performance while running.

Spare drives and rebuilds

What is a spare drive?

A spare drive is reserved to automatically replace a failed drive in a redundant array. It is not available for normal storage while assigned as a spare.

Do I need a spare drive?

A spare drive is optional and recommended when minimising downtime is a priority. The spare remains inactive during normal operation and is used only if a drive fails. While a spare drive reduces the time an array operates in a degraded state, during normal operation it cannot be used for data storage or

performance. If maximising usable capacity is more important, consider a redundant RAID level such as RAID 5, which allows all available drives to be used for storage instead of reserving one as a spare.

Note — If the failed drive is under warranty, you can check warranty status at www.seagate.com/warranty. Contact Seagate customer support atwww.seagate.com/supportfor information about drive replacement.

What's the difference between a dedicated spare and a global spare?

A dedicated spare is assigned to a specific array, while a global spare can be used by any compatible array on the device.

What happens to unconfigured drives?

Under normal operation for the arrays on the device, an unconfigured drive will remain unused. However, the RAID controller may assign an unconfigured drive as a spare to maintain the integrity of an array that has a failed drive. This will result in deleting all data on the unconfigured drive.

Operation behaviour and limits

Why are some actions unavailable or disabled in RAID Manager?

Available actions depend on the current state of the array. Certain actions may be unavailable while another operation is in progress or when the array is degraded or offline.

Can I perform more than one operation at a time (for example, initialisation and a disk check)?

No. Operations such as initialisation, consistency checks, and RAID level changes must be performed sequentially.