LaCie Rugged RAID Pro User Manual

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Introduction

Thanks to its embedded SD card reader, Rugged RAID Pro will ease the backup of your content in the field. Thinner and lighter than its predecessor and configurable with LaCie RAID Manager, this drive is a versatile travel companion for busy videographers and professional photographers.

This user manual provides instructions on how to set up your Rugged RAID Pro.

For common questions and answers about your hard drive, see Frequently Asked Questions or visit LaCie customer support.

Box content

- LaCie Rugged® RAID Pro
- USB-C (USB 3.1 Gen 2) cable
- USB-C to USB-A cable
- Removable cover and spare
- Power supply (for use when USB connection is not powering device)
- Quick Install Guide

> **!** **Important info**—Save your packaging. If you experience problems with your hard drive and want to exchange it, the hard drive must be returned in its original packaging.

Minimum system requirements

- Computer with a USB-C, USB 3.0 or USB 2.0 port.
- Latest version of Windows® 7 and later / Mac OS® X 10.10 and later
- 600MB recommended

Storage and RAID management

LaCie Rugged RAID Pro storage is managed by LaCie Toolkit. See the Toolkit user manual for details.

The LaCie RAID Manager software is used to change the RAID configuration for the device. See the LaCie RAID Manager for 2-Bay Devices user manual for details.

Views

Remove the port protector to view the ports and LEDs.
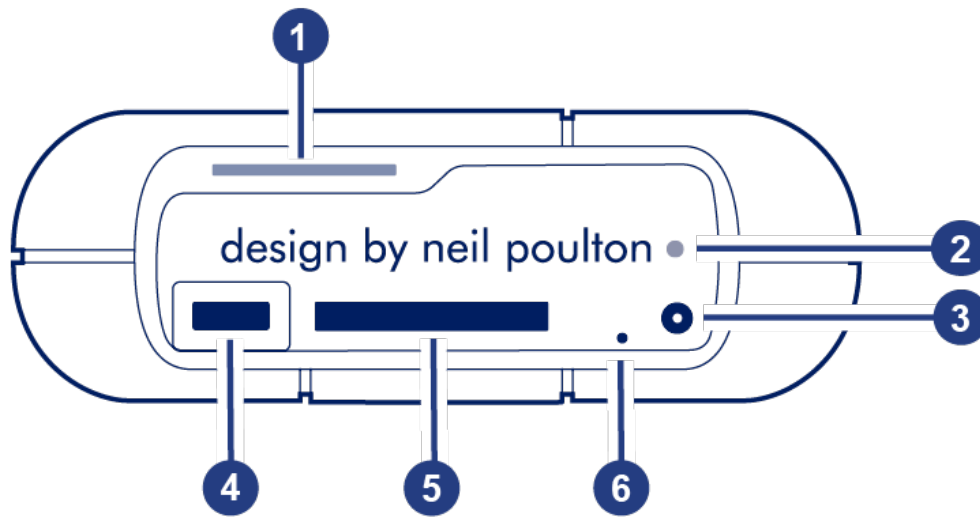
1. **Status LED**—Indicates Rugged RAID Pro's status. See LED Status and Power.
2. **Power LED**—Blinks if Rugged RAID Pro is not receiving enough power from the USB connection to your computer, requiring the use of the included power supply. See LED Status and Power.
3. **Power input**—Connect the power cable to this port if needed. Use only the power cable included with your LaCie Rugged RAID Pro. Attaching third-party or other LaCie power cables with incorrect voltage can damage the device. See LED Status and Power.
4. **USB-C (USB 3.1 Gen 1) port**—Connect the Rugged RAID Pro to a computer. See Getting Connected.
5. **Secure Digital (SD) card slot**—Use your file browser to manually copy files to and from SD cards. You can also let Toolkit's automated import feature quickly copy files to Rugged RAID Pro from any inserted SD card. For details on automated import, see the Toolkit user manual
6. **RAID pinhole**—Use the pinhole when confirming a change to your RAID level. See Manage RAID.

> ✎ Attach the port protector when transporting LaCie Rugged RAID Pro.

Specifications

Enclosure dimensions

Side	Dimensions (mm / in)
Width	30 / 1.181
Height	140.12 / 5.517

Length   91 / 3.583

Enclosure weight (with 4TB HDD)

Weight (kg / lbs)
0.446 / 0.981

Electrical

Power supply: 5.4V 2A

> **!** Use only the power supply provided with your Rugged RAID Pro. Power supplies from third-party devices and other LaCie products can damage your Rugged RAID Pro.

Your device might get warm

Your device might feel warm to the touch when copying or moving a large number of files. These conditions are normal. Your device will return to a regular temperature after it's finished copying.

Conditions that lead to a higher ambient temperature may affect performance, for example:

- Leaving the device in direct sunlight for a limited period of time.
- Leaving the device in a hot enclosed space, such as a car on a hot day.

Extended exposure to extreme weather, heat or water will harm the product and/or permanently damage it. All such actions void the warranty.

Ingress Protection rating

The Ingress Protection (IP) rating is a standard for defining the types of protection supported by equipment and devices. The two-digit code for IP lets users know the conditions that the device can withstand. The two digits are independent, with each number representing a different level of protection.

LaCie Rugged RAID Pro is rated IP 54.

5: Dust protected—Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment.

4: Spraying of water—Water splashing against the enclosure from any direction shall have no harmful effect, utilizing either: a) an oscillating fixture, or b) a spray nozzle with no shield.

LaCie Rugged RAID Pro has also been tested for the following:

- Drop resistance—Dropped from heights up to 1.2 meters / 4 feet (in non-operating mode).
- Crush resistance—Driven over by an approximately 1-ton car (1000kg / 2205 lbs).

LED Status and Power

Status LED behavior

The status LED below the protective casing indicates the status of Rugged RAID Pro.
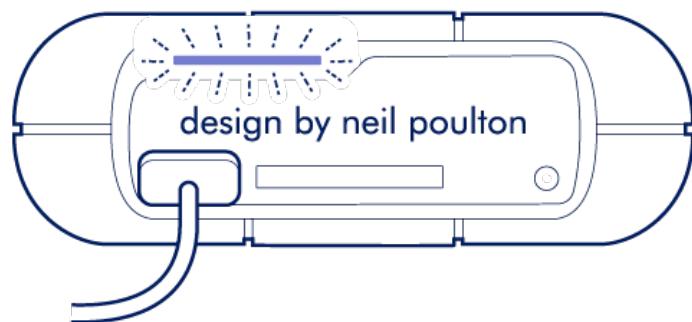
LED	State
On	The device is ready.
Blinking	The device is being accessed.
Fast blinking	A drive is not ready or has failed.
Off	Device inactive because it's turned off or in power-saving mode.

Contact LaCie technical support if:

- **The status LED remains off while the device is connected to a power supply and to your computer**. Confirm that Rugged RAID Pro is not in power-saving mode before contacting LaCie technical support.
- **The status LED continues to blink rapidly**. One or both of your hard drives may have failed. Do not swap one or both hard drives onsite or in the field. Doing so will void Rugged RAID Pro's warranty.

Power LED behavior

Rugged RAID Pro is designed to operate using power from the connection to your computer. If the connection isn't delivering enough power for Rugged RAID Pro to operate, the power LED below the protective casing blinks.
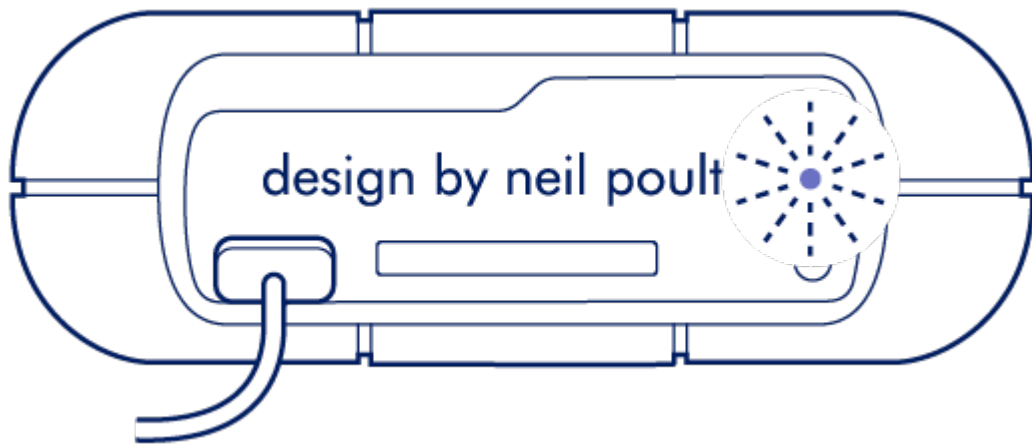
If the power LED light is blinking, connect the power cable to Rugged RAID Pro and then connect the power supply to a live power outlet.
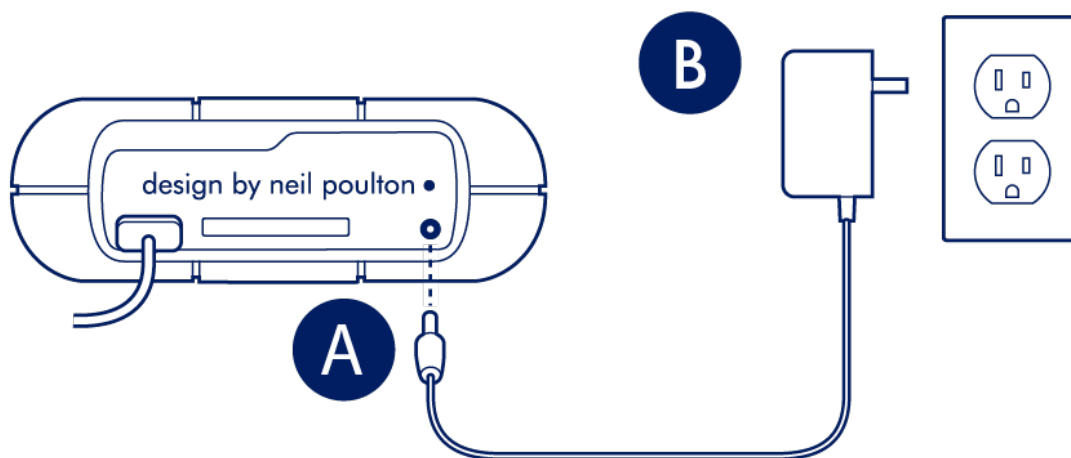
Power-saving mode

Your Rugged RAID Pro can conserve energy by entering power-saving mode. Managed by your computer, power-saving mode can extend the life of the hard drives by sparing them from working during extended periods of inactivity.

Operating system

You can initiate power-saving mode on your computer by performing one of the following:

- Placing the host computer in sleep mode.
- **Mac OS**—Go to System Preferences > Energy Saver to enable sleep mode for hard drives.
- **Windows**—Go to Control Panel > Hardware > Power Options > Choose a power plan > Change advanced power settings. Click on Hard disk and Turn off the hard disk after. Choose the time to spin down USB hard drives.

To exit power-saving mode, review the table below:

Entering power-saving mode	Exiting power-saving mode
The host computer placed the product into power-saving mode due to inactivity.	Access the Rugged RAID Pro's volume on the host computer. For example, copy files to its volume.
The computer is in sleep mode.	Wake up the computer.

> **Note on ejecting the volume and power-saving mode**—Rugged RAID Pro enters power-saving mode when its volumes are ejected and the device remains connected to the computer. To access Rugged RAID Pro's volumes, unplug the interface cable from the computer and reconnect it.

Cables and Connectors

USB-C protocols

USB is a serial input/output technology for connecting peripheral devices to a computer. USB-C is the latest implementation of this standard and it provides higher bandwidth and new power management features.

USB-C supports many protocols:

Thunderbolt 3	transfer rates up to 40Gb/s
USB-C 3.1 Gen 2	transfer rates up to 10Gb/s
USB-C 3.1 Gen 1	transfer rates up to 5Gb/s
SuperSpeed USB 3.0	transfer rates up to 5Gb/s
Hi-Speed USB 2.0	transfer rates up to 480Mb/s

The USB-C port on the LaCie Rugged RAID Pro is USB 3.1 Gen 1. You can connect your Rugged RAID Pro to any USB-C or USB Type A port but transfer rates vary. See below for more details.

Cables

Your LaCie hard drive is shipped with two cables for universal compatibility with modern computers.

USB-C to USB-C cable

For optimal transfer rates, use the USB-C to USB-C cable to connect your computer to the USB 3.1 Gen 1 port on LaCie Rugged RAID Pro.
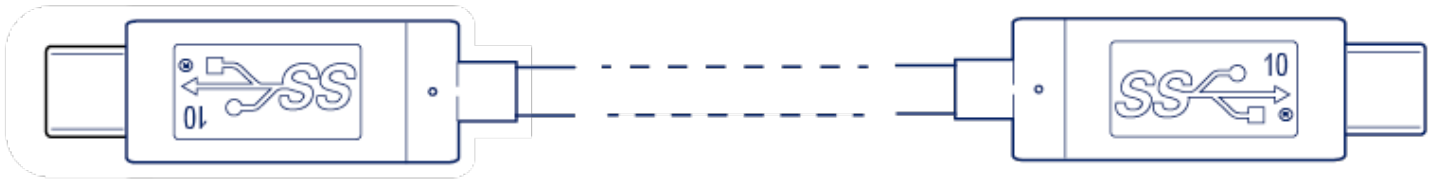
USB-C to USB Type A cable

Use the USB-C to USB Type A cable to connect LaCie Rugged RAID Pro to a computer's Type A port (USB 3.0 or USB 2.0).
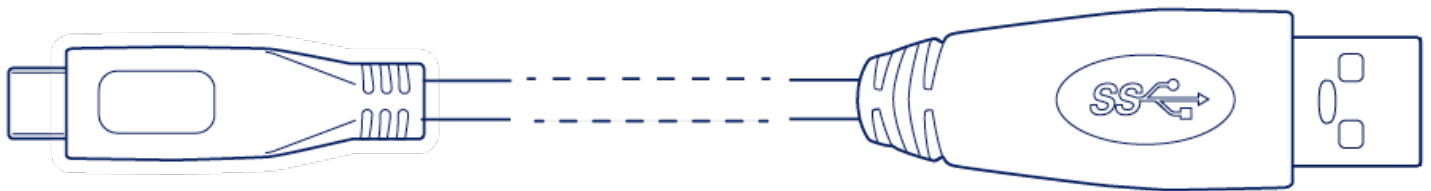
Transfer rates with USB Type A connections have the potential to reach the following speeds:

SuperSpeed USB 3.0	transfer rates up to 5Gb/s
Hi-Speed USB 2.0	transfer rates up to 480Mb/s

Getting Connected

STEP 1 – Connect the USB cable

Confirm the type of USB port on your computer, then choose the appropriate cable to connect your device.

Use the USB-C to USB-C cable if your computer has a USB-C port.
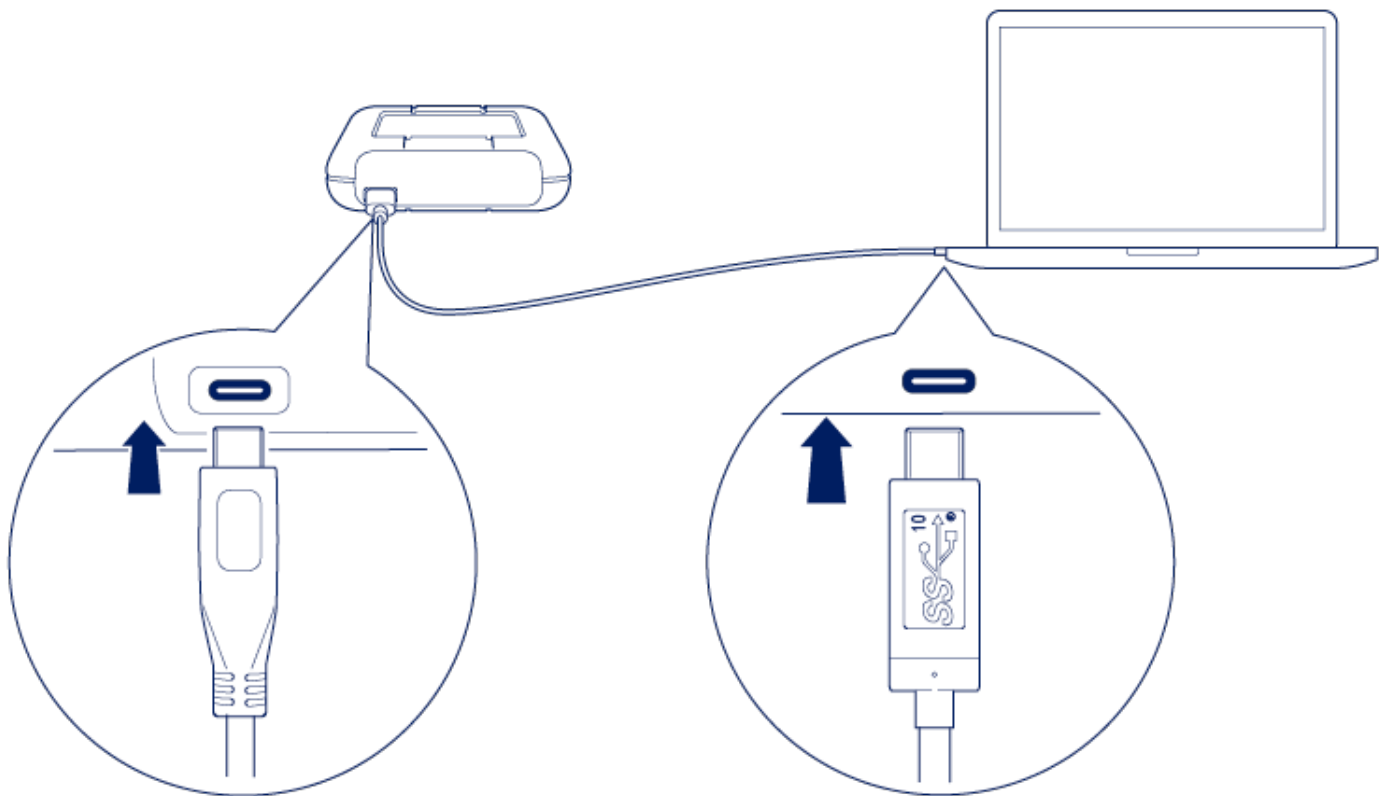
Use the USB-C to USB Type A cable if your computer does not have a USB-C port.
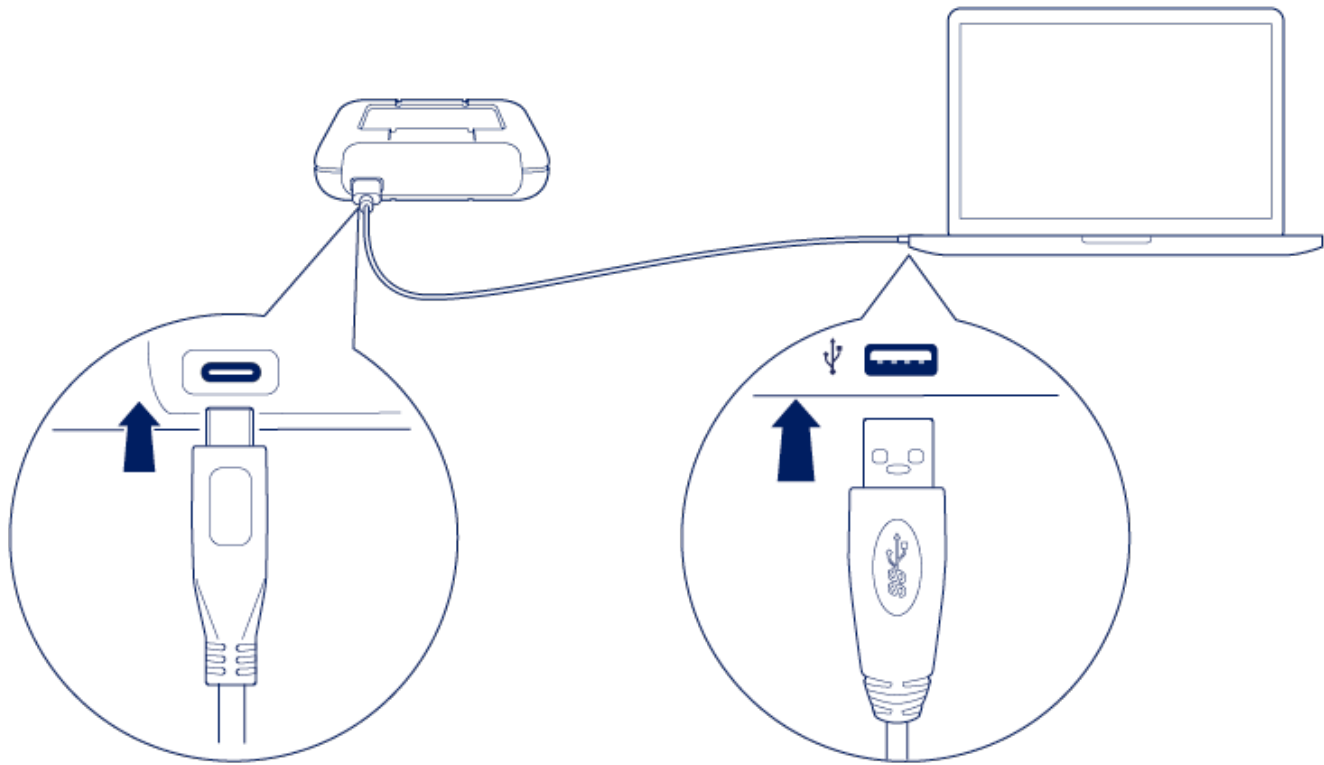
STEP 2 – Check for power

LaCie Rugged RAID Pro is designed to operate using power from the USB connection to your computer. If the USB connection isn't delivering enough power for Rugged RAID Pro to operate, the power LED blinks.
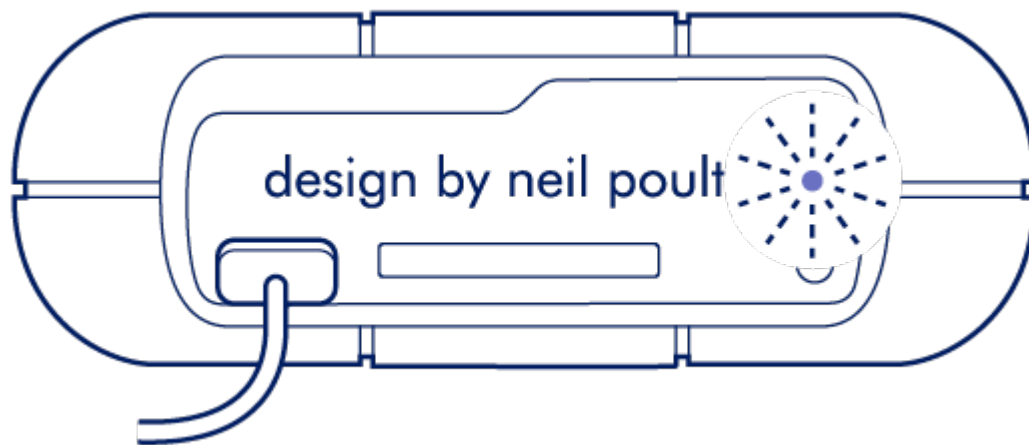
If the LED light is blinking, connect the power cable to Rugged RAID Pro and then connect the power supply to a live power outlet.
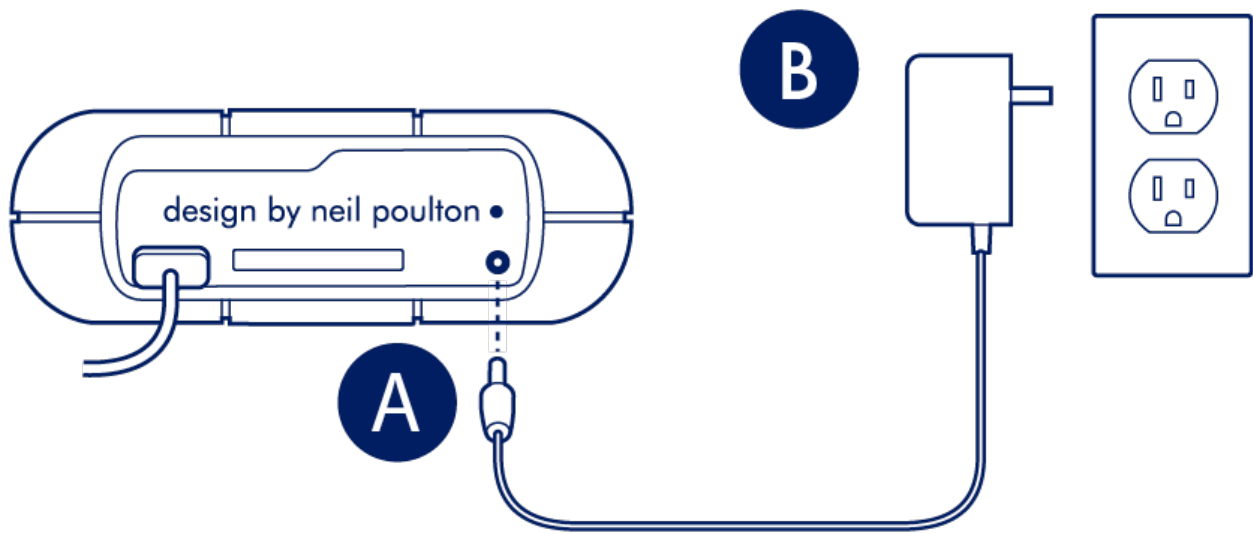
STEP 3 - Set up LaCie Rugged RAID Pro

The setup process lets you:

Register your device	Get the most from your device with easy access to information and support.
Install LaCie Toolkit	Manage backup plans, mirror folders, imports from memory cards, and more.
Download LaCie RAID Manager	Change RAID levels to optimize Rugged RAID Pro for capacity/speed or protection.

1. Using a file manager such as File Explorer or Finder, open LaCie Rugged RAID Pro and launch Start Here Win or Start Here Mac.

2. Follow the onscreen instructions.

> ✎   Your computer must be connected to the internet to install Toolkit.

Learn more about Toolkit

Toolkit provides useful tools that let you easily:

- Manage backup plans (Windows only).
- Create mirror folders.
- Automate imports from memory cards.
- Optimize disk format for use with a specific operating system.

For details on Toolkit features, see the LaCie Toolkit user manual.

Learn more about LaCie RAID Manager

Your LaCie Rugged RAID Pro can be configured as RAID 0, RAID 1, or JBOD. Use LaCie RAID Manager to switch RAID levels. For more information, see the LaCie RAID Manager for 2-Bay Devices user manual.

Storage format

LaCie Rugged RAID Pro is delivered preformatted as exFAT for compatibility with both Windows and Mac computers. The dual disks are configured for optimal performance using RAID 0. You can change the configuration to RAID 1, which protects data in case one disk fails. Use LaCie RAID Manager to make changes to the RAID. To learn more about RAID levels and changing RAID levels, see Manage RAID.

Manage RAID

LaCie RAID Manager manages the RAID configuration for your LaCie Rugged RAID Pro and provides important firmware updates and notifications. You may have already installed LaCie RAID Manager as part of your initial setup. If LaCie RAID Manager is not installed on your computer, you can download and install the app:

1. On the computer that will connect to the Rugged RAID Pro, go to www.lacie.com/support/lrm.
2. Download LaCie RAID Manager for Windows or Mac.
3. Launch the Installer.
4. Follow the on-screen instructions to complete the installation.

The process automatically installs a driver that allows LaCie RAID Manager to detect the device and manage RAID arrays.

RAID levels

LaCie Rugged RAID Pro can be configured as RAID 0, RAID 1, or JBOD. Each RAID level has its own advantages:

RAID level	Capacity	Protection	Speed	Factory default
RAID 0	100%	None	Excellent	Yes
RAID 1	50%	Excellent	Good	No

RAID 0—Data is not duplicated on both hard drives in RAID 0. This results in faster transfers and more storage, since the full capacity of both drives can be used to store unique data. However, RAID 0 lacks a very important feature: data protection. If a hard drive fails, all data in the array is lost.

RAID 1—RAID 1 provides greater safety since data is duplicated on each disk in the array. If a single disk fails, the data remains available on the other disk. However, this comes at a cost—since the same data is written to each drive, copying data takes longer and overall storage capacity is reduced by 50%. RAID 1 is a good choice when safety is more important than speed or disk space.

JBOD—"JBOD" stands for "Just a Bunch of Disks", meaning that your two drives have not been configured as an array and operate as two independent disks.

Launch LaCie RAID Manager

Administrator users

Users with administrator privileges for the computer can launch LaCie RAID Manager without signing into the application.

Standard users

A standard (non-adminstrator) user launching LaCie RAID Manager is prompted to sign in with administrator credentials. An administrator should launch the application to prepare the device for a standard user.

Changing RAID levels

To change RAID levels, confirm that Rugged RAID Pro is connected to your computer and powered. You'll need a thin, pointed object such as the end of a paperclip to confirm the RAID change.

> **!** All files are deleted from Rugged RAID Pro when you modify the array.

1. Launch LaCie RAID Manager.
2. Click Array in the sidebar, and then click Modify.
3. Choose the RAID level you want to configure and click Next.
4. Confirm that you want to modify the array by clicking Modify.
5. At the prompt, insert the pointed end of the paperclip into the RAID pinhole and use it to press the RAID button inside. A message confirms that the array has been modified.

LaCie RAID Manager device and app management

For other LaCie RAID Manager functions, see the LaCie RAID Manager for 2-Bay Devices user manual.

Optional Formatting and Partitioning

LaCie Rugged RAID Pro is delivered formatted in exFAT for compatibility with both Windows and Mac computers. If you use the drive with only one type of computer, you can optimize file copy performance by formatting the drive in the native file system for your operating system—NTFS for Windows or HFS+ for Macs. There are two ways you can optimize performance:

Toolkit Optimize—Format your drive for optimal performance with just a few simple clicks.
Manual formatting—Use Disk Management (Windows) or Disk Utility (Mac) to format your drive in non-native formats.

About file system formats

NTFS—The native file system for Windows. macOS can read NTFS volumes but cannot natively write to them.
Mac OS Extended (HFS+)—The native hard drive file system for macOS. Windows cannot natively read or write to HFS+ (journaled) volumes.
exFAT—Compatible with Mac and Windows. exFAT is not a journaled file system which means it can be more susceptible to data corruption when errors occur or the drive is not disconnected properly from the computer.
FAT32—Compatible with Mac and Windows. However, FAT32 is a legacy file system designed for low capacity hard drives and it is not recommended for modern hard drives or operating systems. A FAT32 partition can reach up to 32GB when formatted on a Windows PC.

How to choose the file system format

Use NTFS if:

...you connect the storage device to Windows computers, and you don't need to allow a Mac to write to the disk.

Use HFS+ if:

...you connect the storage device to Mac computers, and you don't need to allow a Windows computer to read or write to the disk.

Use exFAT if:

...you need to allow both Mac and Windows computers to read and write to the disk.

You can use FAT32 if:

...you connect the storage device to older Windows and Mac computers. FAT32 is not recommended for modern operating systems and computers.

Toolkit Optimize

Use Toolkit Optimize to format your drive for optimal performance with your operating system's native file format— NTFS for Windows or HFS+ for macOS. File transfer rates can be significantly better with the native format.

> **!** **Formatting erases everything on the storage device.** LaCie highly recommends that you **back up all data** on your storage device before performing the steps below. **LaCie is not responsible for any data lost due to formatting, partitioning or using a LaCie storage device.**

1. Connect LaCie Rugged RAID Pro to your computer.
2. Open Toolkit.
3. On the Main Menu, click on the LaCie Rugged RAID Pro device.
4. Click on the More menu icon for the volume you want to optimize. There are two options:
   OPTIMIZE—Let Toolkit choose the optimal format for your computer system and configure the volume for you with just a few clicks.
   FORMAT—Opens the disk management utility for your operating system, which you can use to manually format your drive. Use this option if you want to format the drive in non-native formats.
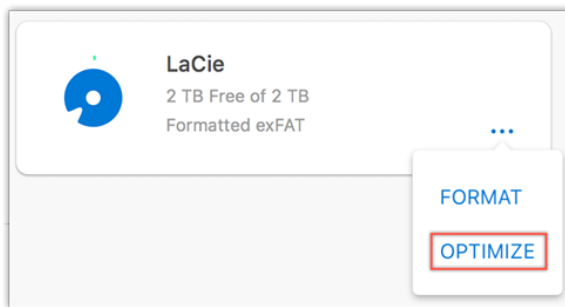
5. Click Optimize.
6. A notice appears asking you to confirm the format operation. Click Format.

Manual formatting

The steps below help you format and partition a storage device.

> **!** Formatting erases everything on the storage device. LaCie highly recommends that you **back up all data** on your storage device before performing the steps below. **LaCie is not responsible for any data lost due to formatting, partitioning or using a LaCie storage device.**
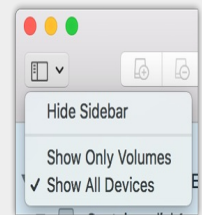
Mac

macOS version 10.11 or later

1. Open the Finder and go to **Applications | Utilities | Disk Utility**.
2. In the sidebar to the left, select your LaCie Rugged RAiD Pro drive.

> ✎ **macOS 10.13 and later**—Make sure to select the disk and not just the volume. If you don't see two entries listed in the sidebar, change the view in disk utility to show both the drive and the volume. The view button is in the upper left side of the Disk Utility window. Change the view to Show All Devices. This feature was introduced in macOS 10.13 and is not available in 10.11 or 10.12.

3. Select Erase.
4. A dialog box opens. Enter a name for the drive. This will be the name displayed when the drive mounts
5. For Format, select **OS X Extended (Journaled).**
6. For Scheme, select **GUID Partition Map.**
7. Click Erase.
8. Disk Utility will format the drive. When it's finished, click Done.

macOS version 10.10

1. Open the Finder and go to **Applications | Utilities | Disk Utility.**
2. In the sidebar to the left, select the LaCie Rugged RAID Pro drive that shows the capacity.
3. In the Disk Utility window, select the **Partition** tab.
4. Under Partition Layout, select **1 partition**.
5. Enter a name for the drive. This will be the name displayed when the drive mounts.
6. For Format, select **OS X Extended (Journaled)**.
7. Click on Options. Select **GUID Partition Map**, and then click OK.
8. Click Apply.
9. A dialog appears advising you that this is a data destructive process and any data currently on the drive will be deleted.
10. Select Partition to complete the formatting process.

> ❗ If security for the drive was disabled when you formatted, you will enable security once the format process is complete. During the security setup sequence, you will be asked to enter your secure code (SID). This will be the password you created previously, and not the secure code found on the insert included with your package.

Windows

1. Make sure the storage device is connected to and mounted on the computer.
2. Go to Search and then type **diskmgmt.msc.** In the search results, double click **Disk Management**.
3. From the list of storage devices in the middle of the Disk Management window, locate your LaCie device.
4. The partition must be available to format. If it is currently formatted, right click on the partion and then choose Delete.
5. To create a new partition, right click on the volume and select New Simple Volume. Follow the on-screen instructions when the **New Simple Volume** Wizard appears.

Safely Remove Rugged RAID Pro From Your Computer

Always eject a storage drive from your computer before physically disconnecting it. Your computer must perform filing and housekeeping operations on the drive before it is removed. Therefore, if you unplug the drive without using the operating system's software, your files can become corrupt or damaged.

Mac

There are several ways you can eject your hard drive from a Mac. See below for two options.

Eject via Finder window

1. Open a Finder window.
2. On the sidebar, go to Devices and locate the drive you want to eject. Click the eject symbol to the right of the drive name.
3. Once the hard drive disappears from the sidebar or, the Finder window closes, you can disconnect the hard drive's cable from your Mac.

Eject via Desktop

1. Select the desktop icon for your hard drive and drag it to the Trash.
2. When the hard drive's icon is no longer visible on your desktop, you can physically disconnect the hard drive from your Mac.
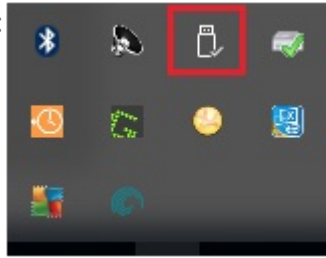
Windows

Use the Safely Remove tool to eject a hard drive.

1. Click the Safely Remove icon in your Windows System Tray to view the devices you can eject.

Windows 7:

Windows 8 / Windows 10:

2. If you don't see the Safely Remove Hardware icon, click the Show hidden icons arrow in the system tray to display all icons in the notification area.
3. In the list of devices, choose the device you want to eject. Windows displays a notification when it is safe to remove the device.
4. Disconnect the hard drive from the computer.

Frequently Asked Questions

For help setting up and using your LaCie hard drive, review the frequently asked questions below. For additional support resources, go to LaCie customer support.

Hard drive icon

Why does the hard drive icon not appear on my desktop (Mac)?

Why does the hard drive icon not appear in Computer (Windows)?

File transfers

Why are my file transfers slow?

File transfer error messages

Why did I get an error message telling me that the drive has been disconnected when coming out of sleep mode?

Why did I get an "Error -50" message while copying to a FAT32 volume?

Using a USB hub for USB devices

Can I use my hard drive with a USB hub?

Provided USB cables

Can I use my hard drive with a longer cable?

USB 2.0 ports

Will my hard drive's USB 3.1 Gen 1 port work with my computer's USB 2.0 port?