



S O F T R A I D

Quick Start Guide



TABLE OF CONTENTS

INTRODUCTION	1
1.1 Minimum System Requirements	
1.2 Features	
1.3 About This Manual	
 SYSTEM SETUP	 2
2.1 Getting Started	
2.2 Initializing, Verifying, and Certifying Disks	
2.2.1 Initializing Disks	
2.2.2 Verifying and Certifying Disks	
2.3 Creating a Volume	
2.4 Configuring Email Notifications	
2.5 Disk Failure, Replacement, and RAID Rebuild	
 SUPPORT RESOURCES	 8
3.1 Troubleshooting	
3.1.1 ThunderBay Troubleshooting	
3.1.2 SoftRAID Troubleshooting	
3.2 About Data Backup	
3.3 Online Resources	
3.4 Contacting Technical Support	

INTRODUCTION

SoftRAID® is a powerful software RAID application for Mac OS X. To get optimal performance from your OWC ThunderBay, SoftRAID should be installed. Aside from creating RAID volumes, you can use SoftRAID to certify that disks are healthy, monitor the status of your RAID volumes, predict drive failures, and send email when a problem occurs.

If you purchased a SoftRAID ThunderBay solution with drives included, the drives have been pre-configured in SoftRAID as a RAID 5 volume. If you are using your own drives, you need to initialize them and create one or more RAID volumes. Proceed to **Section 2.1** for first-time setup instructions.

1.1 Minimum System Requirements

- OWC ThunderBay 4 or ThunderBay 4 mini
- Apple Mac with available Thunderbolt™ port
- Thunderbolt™ 2 port recommended for best performance
- OS X 10.9.3 or later

1.2 Features

- RAID levels supported: 0, 1, 1+0, 4, and 5
- Certify disks — writes a pattern to each sector on the disk and then reads it back to ensure that the drive is functioning as designed.
- Verify disks — reads every sector on the disk to ensure that it can be read without errors.
- Validate volumes — reads every volume block to ensure it can be read without errors.
- S.M.A.R.T monitoring of all connected drives, including early warning for disk failure.
- Custom email alerts for important events

1.3 About This Manual

The features, screenshots, and descriptions may vary slightly between this manual and the software version purchased. Drivers, functions, and features may change depending on the software version. Please visit the product web page for the most recent product specifications.

2.1 Getting Started

1. Referencing the ThunderBay's Assembly Manual & User Guide, install your drives into the enclosure.
2. Connect the ThunderBay to a power outlet. If you're using a ThunderBay 4, you also need to set the power switch to the ON position.
3. Connect a Thunderbolt™ cable between the ThunderBay and the computer. When you do this, the ThunderBay will power on.
4. If the ThunderBay has been pre-configured with SoftRAID and the computer is using OS X 10.9.3 or later, the SoftRAID volume will be available immediately and can be used.
5. If the ThunderBay includes drives, the SoftRAID installer is included on the volume. For units without drives, visit www.owcdigital.com/registration/ to download the installer. The SoftRAID serial number is on the bottom of the ThunderBay.
6. Open the SoftRAID installer then drag the SoftRAID folder into your 'Applications' folder when prompted.
7. Go to the OS X 'Applications' folder, open the SoftRAID folder, then open the ThunderBay Installer. You may be prompted to confirm that you wish to open the application by supplying an administrator password.
8. The ThunderBay Installer will install the SoftRAID driver on your computer. You may see a dialog box asking if you wish to update the existing driver. Click 'Update' and enter an administrator password to install the updated driver. You may be prompted to restart your computer.
9. SoftRAID is now fully installed. The next time you launch SoftRAID, you will be prompted to enter the serial number that you obtained in **Step 5**.

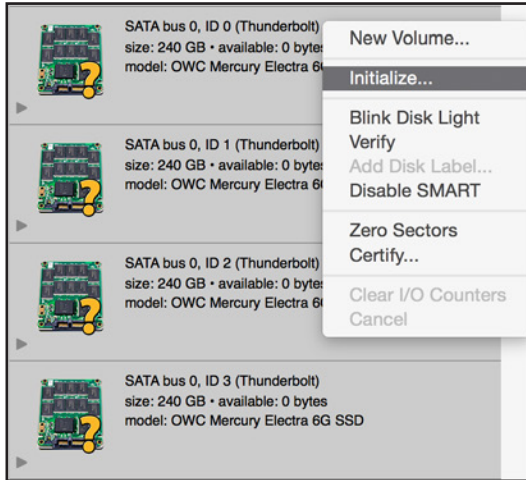
2.2 Initializing, Verifying, and Certifying Disks

If you are using your own disks, you will need to initialize them in SoftRAID before they can be used. If you are using a ThunderBay that has already been configured in SoftRAID, you can proceed to **Section 2.4**.

2.2.1 Initializing Disks

When using your own disks, please follow these steps to initialize the disks.

1. Select all of disks that you need to initialize (Shift-click to select multiple disks).
2. Right-click on one of the selected disks to access the ‘Disk’ menu, then select the ‘Initialize...’ option, as shown below.



3. When asked, confirm that you wish to initialize the disks. **Note: initializing a disk will destroy all data on the disk — before proceeding make sure there is no important data on the disks!**

2.2.2 Verifying and Certifying Disks

SoftRAID has two features that can test a disk to confirm that it is healthy: ‘Verify’ and ‘Certify’. Both features can be accessed by right-clicking the disk that you wish to scan, then choosing the appropriate option.

- Verify reads each disk sector to determine if any of them are unreadable.
- Certify writes a pattern of data to each sector on the disk and then reads the sector to make sure the pattern has not changed. You can customize the number of times that SoftRAID writes this pattern to the disk. The last pass of ‘Certify’ will write zeroes to the disk to ensure that it is ready to be used.

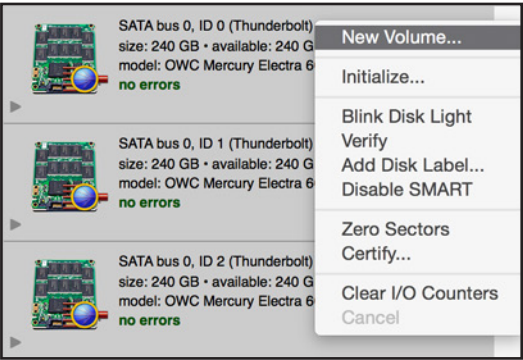
Note: ‘Certify’ is a destructive process, so before proceeding make sure there is no important data on the disk. Note also that ‘Certify’ is a more comprehensive test, and therefore takes much longer to complete than ‘Verify’.

Keep in mind that both ‘Verify’ and ‘Certify’ can take multiple hours to complete, and the process will pause if the computer enters Sleep mode.

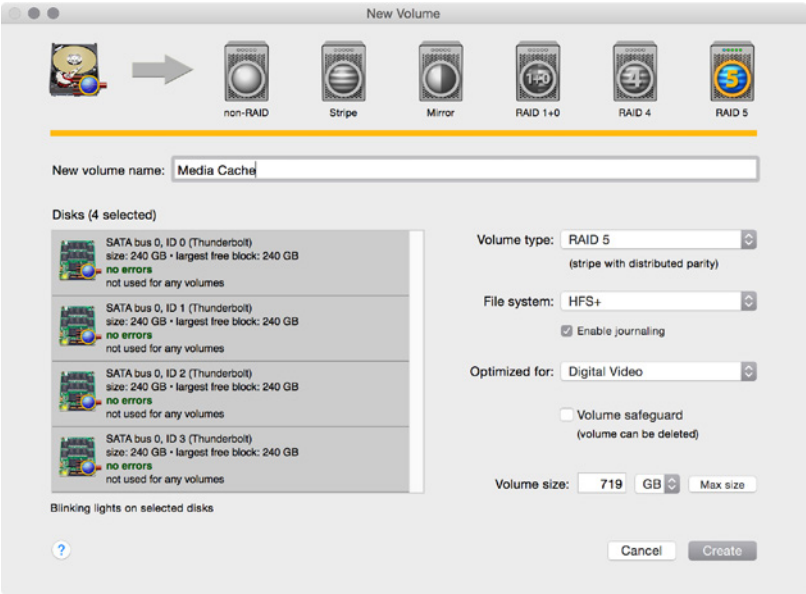
2.3 Creating a Volume

Once your disks have been initialized, the next step is to create one or more volumes. To create a new volume in SoftRAID, follow these steps:

1. Select the disks that you want to be members of the new volume, then right-click on one of the disks to open the 'Disk' menu. Select 'New Volume...'



2. The New Volume screen will appear. The disks selected in the previous step will be highlighted in dark grey. SoftRAID will also cause the LEDs for the selected disks to blink on the front of the ThunderBay. Use the pop-up menus select the Volume Type, File System type, Optimization settings, Volume Safeguard and Volume size. **IMPORTANT:** the listing of disks in the SoftRAID interface does not necessarily reflect the order of disks inside the ThunderBay.



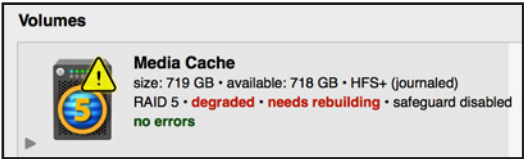
2.4 Configuring Email Notifications

SoftRAID has the ability to send email notifications when specified events occur. To configure email notifications, follow these steps:

1. From the main menu click 'SoftRAID' then choose 'Email Notification...'
2. In the 'Sender Info' tab, enter the full name and email address that you want to use when SoftRAID sends out email notifications. Note that this information does not need to match a real email address. It can be anything you like, and is simply there to identify the email as being sent by SoftRAID.
3. In the 'Outgoing Server' tab, enter the information for the server, user name, and password that will be used to send the email messages. The 'Configure For' drop-down menu will help fill in the server information for common email services like Gmail and Yahoo! mail. There is an option to configure an alternate SMTP server as a backup, but it is not necessary.
4. The next two tabs, 'Notifying Events' and 'Alarms', contain checkboxes that allow you to customize what will cause SoftRAID to send out an email notification. 'Notifying Events' contains mostly hardware problems such as disk I/O errors and rebuild failures. 'Alarms' lets you set optional thresholds for things like a disk becoming too full or abnormally high CPU load.
5. The last tab, 'Recipients', lets you set one or more destination addresses.

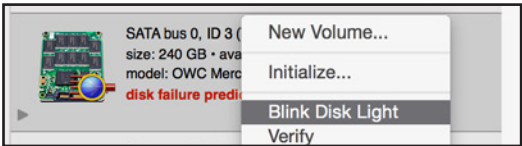
2.5 Disk Failure, Replacement, and RAID Rebuild

In the event of a disk failure or a missing disk, SoftRAID displays the corresponding RAID volume in a degraded state.



To replace the failed disk and rebuild the RAID volume, follow these steps:

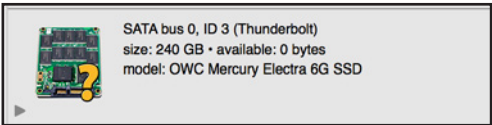
1. Identify the disk that has failed or has been predicted to fail by right-clicking the disk tile, then select 'Blink Disk Light' (shown below). Look at the front of the ThunderBay and remove the disk with the blinking light.



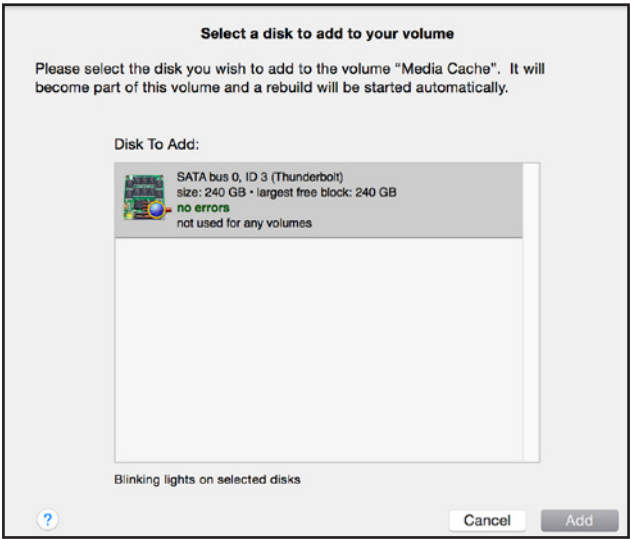
2. Remove the failed disk then replace it with a new one, according to the instructions in the ThunderBay's Assembly Manual & User Guide. When a new disk is inserted, Disk Utility will ask you what to do with the new disk. Click 'Ignore' on this notification dialog box and go back to SoftRAID.



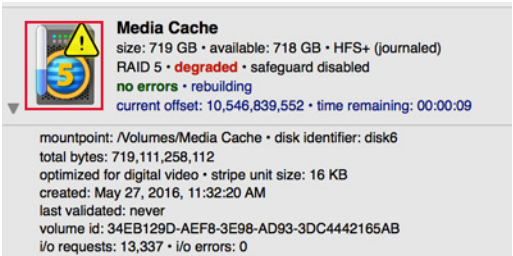
3. If the disk is brand new it will show up in SoftRAID with a question mark icon; if the disk has already been formatted in Disk Utility it will appear with an Apple icon. A new disk needs to be initialized in SoftRAID before it can be added to the RAID volume. Follow the steps in **Section 2.2.1** to do this.



4. Once the new disk is initialized, right-click on the degraded RAID volume and select 'Add Disk...'. Then, in the window that pops up next, click on the new disk to select it and click 'Add'. You will be prompted to confirm your selection. Click 'Add' again to add the disk to the RAID volume and begin the rebuild.



5. The rebuild process will begin automatically as soon as you confirm the addition of the new disk to the RAID volume (shown below). Note that the disk tile shows the predicted time remaining to rebuild the volume, as well as a progress meter on the volume icon (highlighted in red).



You will be able to use the RAID volume during the rebuild process. Make sure the computer is not powered off or put into sleep mode, and keep the ThunderBay turned on and connected to the computer during this process, or the rebuild will be interrupted.

3.1 Troubleshooting

3.1.1 ThunderBay Troubleshooting

Begin your troubleshooting by verifying that the power cable is connected to the ThunderBay and to a power source. If the power cable is connected to a power strip, make sure that the power switch on the strip is turned on. Then, verify that both ends of your cables are properly plugged into the computer and the ThunderBay.

If the ThunderBay is still not working properly, try connecting to another computer or using another Thunderbolt cable. Remember: the ThunderBay needs an active data signal to remain on. If it is disconnected from the computer, or if the computer powers down or goes into sleep mode, the ThunderBay will go to sleep.

3.1.2 SoftRAID Troubleshooting

First make sure that you are using the latest version of SoftRAID. With the application running, go to the 'SoftRAID' menu and select 'Check For Updates...' If a new version of SoftRAID is available, you will be prompted to download it.

If a RAID volume is showing as degraded, examine each member disk in the SoftRAID interface to see where the problem is. If a disk is failing or has failed, follow the instructions in **Section 2.5** to replace the disk and rebuild the RAID. If you are still experiencing problems, see **Section 3.4** for OWC technical support.

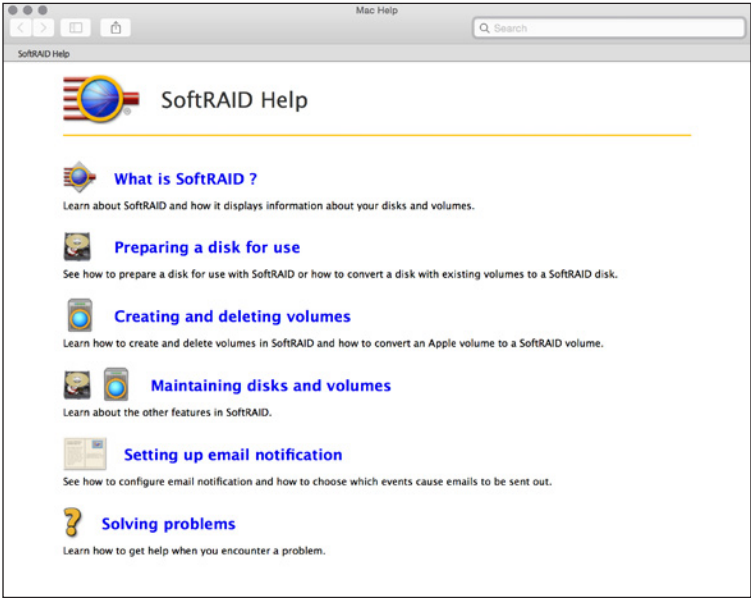
3.2 About Data Backup

To ensure that your files are protected and to prevent data loss, we strongly suggest that you keep two copies of your data: one copy on your OWC ThunderBay and a second copy on either your internal drive or another storage medium, such as an optical backup, or on another external storage unit. Any data loss or corruption while using the ThunderBay with SoftRAID is the sole responsibility of the user, and under no circumstances may OWC, its parents, partners, and affiliates be held liable for loss of the use of data including compensation of any kind or recovery of the data.

3.3 Online Resources

For more information on the full range of SoftRAID features, including RAID modes and related options, please review the detailed content provided via the SoftRAID Help menu, within OS X.

Choose [Help > SoftRAID Help](#), then select the appropriate category. Many helpful hints and screenshots are available to help create the most efficient RAID setup for your specific workflow.



For the SoftRAID FAQ, go to:
www.softraid.com/pages/support/faq.html

3.4 Contacting Technical Support

Hours:
8am - 8pm (CT) Monday - Friday
9am - 4pm (CT) Saturday

(866)-692-7100 (North America)
+1 (815) 338-4751 (International)

Live Chat:
www.owcdigital.com/support

Email:
[www.owcdigital.com/support](mailto:support@owcdigital.com)

Changes:

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FCC Statement:

Warning! Modifications not authorized by the manufacturer may void the user's authority to operate this device.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Health And Safety Precautions:

Use proper anti-static precautions while performing the installation of your hard drives into this drive enclosure. Failure to do so can cause damage to your drive mechanisms and/or the hard drive enclosure.

Read this user guide carefully and follow the correct procedures when setting up the device.

Do not attempt to disassemble or modify the device. To avoid any risk of electrical shock, fire, short-circuiting or dangerous emissions, never insert any metallic object into the device. If it appears to be malfunctioning, contact technical support.

Never expose your device to rain, or use it near water or in damp or wet conditions. Never place objects containing liquids on the drive, as they may spill into its openings. Doing so increases the risk of electrical shock, short-circuiting, fire or personal injury.

General Use Precautions:

To avoid damage, do not expose the device to temperatures outside the range of 5° C to 40° C (41° F to 104° F).

Always unplug the device from the electrical outlet if there is a risk of lightning or if it will be unused for an extended period of time. Otherwise, there is an increased risk of electrical shock, short-circuiting or fire.

Do not use the device near other electrical appliances such as televisions, radios or speakers. Doing so may cause interference which will adversely affect the operation of the other products.

Do not place the device near sources of magnetic interference, such as computer displays, televisions or speakers. Magnetic interference can affect the operation and stability of hard drives.

Do not place heavy objects on top of the device.

Protect your device from excessive exposure to dust during use or storage. Dust can build up inside the device, increasing the risk of damage or malfunction.

Do not block any ventilation openings on the device. These help to keep the device cool during operation. Blocking the ventilation openings may cause damage to the device and cause an increased risk of short-circuiting or fire.

For up-to-date product and warranty information, please visit the product web page.

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