



SOFT RAID[®] 5

Quick Start Guide for the OWC ThunderBay[®]



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INTRODUCTION

SoftRAID® 5 is a powerful software RAID application for the Apple Mac. In addition to setting up RAID volumes, you can use SoftRAID to certify that disks are healthy, monitor the status of your RAID volumes, predict drive failures, and send you an email when a problem occurs.

If you purchased your OWC 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 will need to initialize the drives and create one or more RAID volumes. Proceed to **Section 2.1, Getting Started** for first-time setup instructions.

1.1 MINIMUM SYSTEM REQUIREMENTS

- Apple Mac running OS X 10.6.8 or later

1.2 FEATURES

- Multiple RAID levels, including RAID 5 (new to SoftRAID 5)
- Custom email alerts for important events, including disk failure
- Verification and certification to make sure your disks are completely healthy
- SMART monitoring of all drives connected to your computer, including early warning to predict drive failure
- Rebuilds complete far more quickly than with comparable hardware RAID systems

1.3 ABOUT THIS MANUAL

Features, images, and descriptions may vary slightly between this manual and the software version purchased. Functions and features may change depending on the software version. Please visit the product web page for the most recent product specifications.

SYSTEM SETUP

2.1 GETTING STARTED

NOTE : see the ThunderBay's Assembly Manual & User Guide for more detailed instructions.

1. Install the drives into your OWC ThunderBay.
2. Connect the ThunderBay to a power outlet.
3. Connect a Thunderbolt™ cable between the ThunderBay and a computer. When you do this, the ThunderBay will power on.
4. If your ThunderBay has been pre-configured with SoftRAID and the computer is using OS X 10.9 Mavericks or later, the SoftRAID volume will be available immediately on the computer and can be used. In earlier versions of OS X, the individual drives will be seen in Disk Utility, but the RAID volume will not be recognized. In both cases, you will need to install the SoftRAID 5 application in order to have full use of the RAID volume, including advanced features such as email alerts.
5. To download the installer, go to: www.owcdigital.com/softraidsupport/ To acquire your serial number, go to: www.owcdigital.com/registration/
6. Open the SoftRAID installer and drag the SoftRAID folder into your 'Applications' folder when prompted.
7. Go to your 'Applications' folder, open the SoftRAID folder, then open the ThunderBay Installer. You may be prompted to confirm that you wish to open the application and to enter 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 upgrade the existing driver. Click 'Update' and enter the administrator password to install the updated driver. You may be prompted to restart your computer.
- 9 SoftRAID is now completely installed on your computer. 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

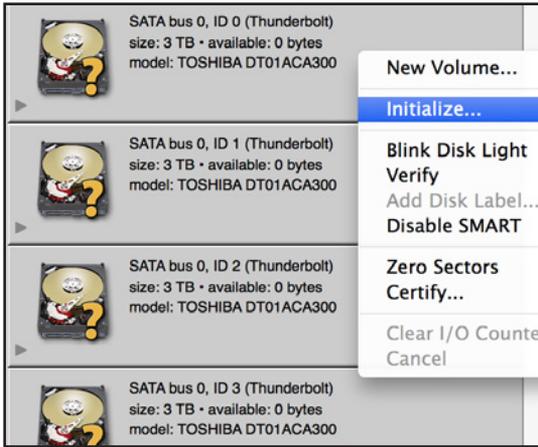
If you are using your own disks that have not already been pre-configured in SoftRAID, you will need to initialize the disks in SoftRAID before they can be used. If you are using a ThunderBay that has already been configured in SoftRAID, you can proceed to **Section 2.4**.

2.2.1 Initializing Disks

If your disks have not previously been formatted or have been initialized through a utility that is not SoftRAID, you will need to initialize the disks in SoftRAID before they can be used to create a volume. Follow these steps to initialize your disks.

1. Select all of the disks that you wish to initialize. Select multiple disks with shift-click.

2. Right-click on one of the selected disks to bring up the 'Disk' menu, then select the 'Initialize...' option, as shown below.



3. On the next window that appears, confirm that you wish to initialize the disks. Note that **initializing a disk will destroy any data on the disk**, so before proceeding make sure there is no important data on the disks you intend to initialize. SoftRAID will now initialize the disks so that they can be used in a SoftRAID volume.

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 of these features can be accessed by right-clicking the disk that you wish to scan.

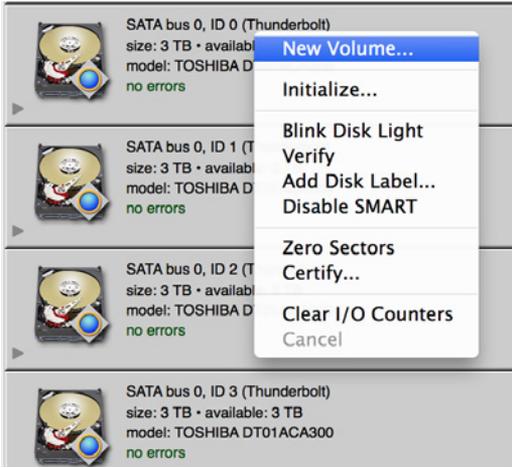
- **Verify** will read each sector on a disk to determine if any of the sectors are unreadable.
- **Certify** will write a pattern of data to each sector on the disk and then read the sector to make sure that the pattern has not changed. You can customize the number of times that SoftRAID writes this pattern to the disk. The last pass of 'certify' will write zeroes to the disk to ensure that it is ready to be used. Because of the nature of this test, 'certify' is a destructive process, so before proceeding make sure there is no important data on the disk. Note also that 'Certify' is a much more complete test, and therefore it takes considerably 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 goes to sleep.

2.3 CREATING A VOLUME

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

1. Select all of the disks that you want to be members of the new volume, then right-click on one of the disks to bring up the 'Disk' menu and select 'New Volume...', as shown below.



2. On the next screen, you will see the available disks, including any that you selected in the previous step. Note that SoftRAID will cause the LEDs on the front of the ThunderBay for the selected disks to blink. This is especially important if you do not intend to use all four of the disks for the same volume, since the listing of disks in the SoftRAID interface is not necessarily going to reflect the order of disks inside the ThunderBay. Select the volume type either through the drop-down menu on the right or by clicking on one of the icons at the top. Give the volume a name, specify the file system and the volume size, then click the 'Create' button at the bottom.



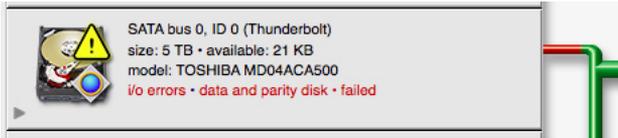
2.4 CONFIGURING EMAIL NOTIFICATIONS

SoftRAID has the ability to send out email notifications when one of a set of events occurs. To configure email notifications, follow these steps:

1. Open SoftRAID, then go to the 'SoftRAID' menu on the menu bar next to the Apple logo and select '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, username, and password that will be used to send the email messages. The 'Configure For' dropdown 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 email addresses to receive the email notifications.

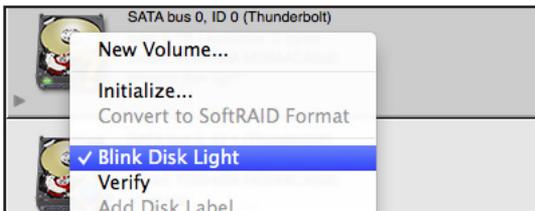
2.5 DISK FAILURE, REPLACEMENT, AND RAID REBUILD

In the event of a disk failure or similar event, SoftRAID will indicate that the RAID volume of which the failed disk is a member is in a degraded state. If your volume has a failed disk, it will look like this:



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

1. Identify the disk in the ThunderBay. To do this, right-click on the disk in SoftRAID, then on the menu that appears, select 'Blink Disk Light'.



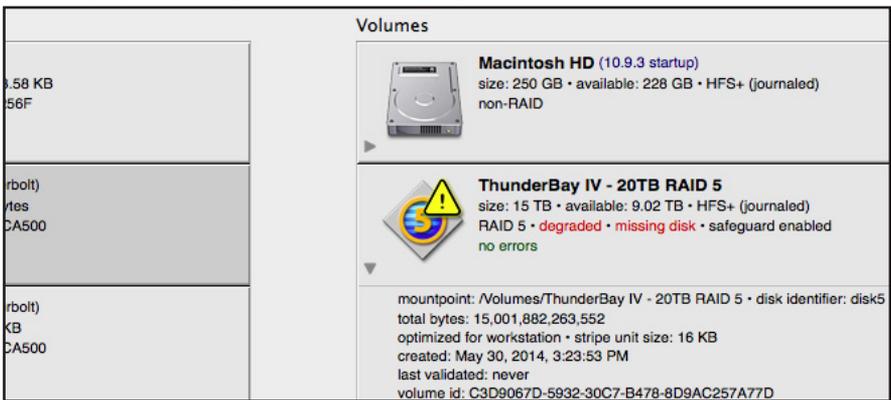
Look at the front of the ThunderBay and remove the disk with the blinking light.

- Remove the failed disk, then replace it with a new one, following the steps in the product manual for the ThunderBay. When the new disk is inserted, Disk Utility will ask you what to do with the new disk.



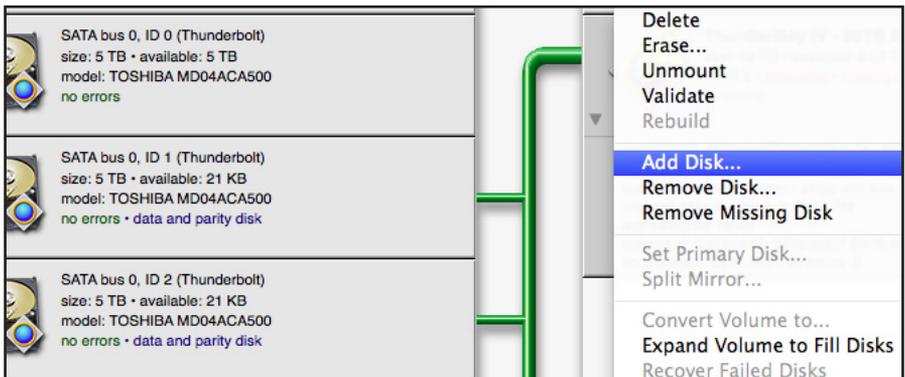
Click 'Ignore' on this pop-up notification and go back to SoftRAID.

- The new disk will show up in SoftRAID with a question mark icon, and the RAID volume will be displayed as 'degraded' with a missing disk.



The new disk needs to be initialized in SoftRAID before it can be added to the RAID volume. To do this, follow the steps in **Section 2.2.1, Initializing Disks**.

- Once the new disk is initialized, right-click on the degraded RAID volume and select 'Add Disk...'

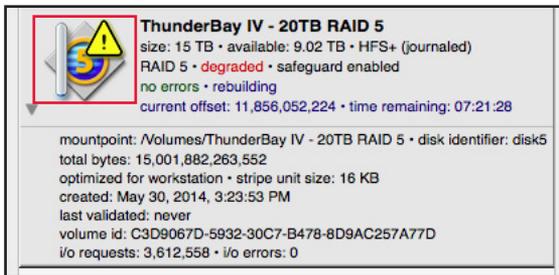


In the window that pops up next, click on the new disk to select it, then click 'Add'.



You will be prompted to confirm your selection. Click 'Add' again to add the new disk to the RAID volume and begin the rebuild process.

5. The rebuild process will begin automatically as soon as you confirm the addition of the new disk to the RAID volume. You can see the estimate of the rebuild time on the icon for the RAID volume in SoftRAID (highlighted in red below, and next to "time remaining".



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.

SUPPORT RESOURCES

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, take a look at each member disk in the SoftRAID interface to see where the problem lies. 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, consult **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 4 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 SoftRAID, the Quick Start Guide is located inside the SoftRAID folder in your 'Applications' folder, and at:

www.owcdigital.com/support/softraid/

For the SoftRAID FAQ, go to:

www.softraid.com/pages/support/faq.html

3.4 CONTACTING TECHNICAL SUPPORT

Hours:

8am to 8pm (CT) Monday - Friday
9AM - 4PM (CT) Saturday

Telephone:

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

Live Chat:

www.owcdigital.com/support

Email:

www.owcdigital.com/support

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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