

n® newer technology inc.™
Guardian **MAX**imus™



**Hardware RAID-1 (Mirror)
Performance Storage Solution**
Owners Manual

1 INTRODUCTION

1.1 SYSTEM REQUIREMENTS

- 1.1.1 Mac Requirements
- 1.1.2 PC Requirements
- 1.1.3 Supported Hard Drives

1.2 CONTENTS

1.3 ABOUT THIS MANUAL

1.4 PORT VIEW & INTERFACE CONNECTIONS

1.5 CABLE CONNECTIONS & QUICKSTART GUIDE

1.6 FRONT STATUS LIGHTS

2 FORMATTING

2.1 IMPORTANT INFORMATION ABOUT BOOTING ON AN OLDER MACINTOSH

2.2 IMPORTANT INFORMATION IF YOU PLAN ON USING YOUR DRIVE WITH A PC SYSTEM

2.3 MACINTOSH FORMATTING

2.4 REMOVING AN EXISTING GUID PARTITION

2.5 WINDOWS FORMATTING

2.6 MACDRIVE 8

3 TROUBLESHOOTING & TIPS

3.1 TROUBLESHOOTING

3.2 USAGE TIPS

4 APPENDIX

4.1 FAQ

4.2 ABOUT DATA BACKUP

5 CUSTOMER SERVICE

5.1 BEFORE CONTACTING CUSTOMER SERVICE

5.2 CUSTOMER SERVICE HOURS OF OPERATION

1 INTRODUCTION

1.1 System Requirements

1.1.1 Mac Requirements

- Minimum PowerPC G4 Processor, 128MB RAM
- eSATA interface, Mac OS X 10.3 or later (OR)
- FireWire interface, Mac OS X 10.2 or later (OR)
- USB 2.0 interface, Mac OS X 10.2 or later

1.1.2 PC Requirements

- Minimum 500MHz Intel Pentium 3 Processor, 128MB RAM
- eSATA interface, Windows XP / Vista (OR)
- FireWire interface, Windows 2000 / XP / Vista (OR)
- USB 2.0 interface, Windows 2000 / XP / Vista / Windows 7

1.1.3 Supported Hard Drives

- Supports two 3.5" SATA Hard Disk Drive (HDD)
- Supports up to 64MB Data Buffer (HDD only)
- Supports up to 10,000RPM speeds (HDD only)
- Hard Drives of identical capacity / model are required

1.2 Contents

Item	Quantity
① Guardian MAXimus	1
② Power brick and cable	1
③ eSATA cable	1
④ 1394B FireWire 800 cable	1
⑤ 1394A FireWire 400 cable	1
⑥ USB 3.0 cable	1
⑦ Screws (2 sizes / types)	12
⑧ Software CD Bundle	1
⑨ User Guide & Owner's Manual	1

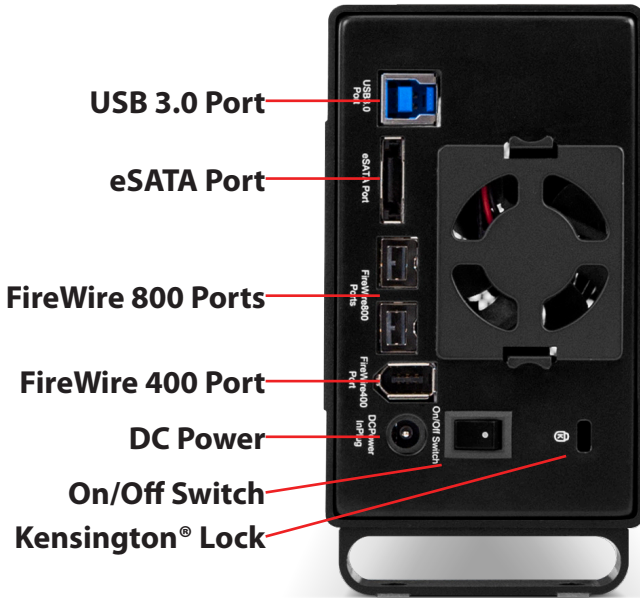
Contents may vary. Please see item listing for exact contents.



1.3 About This Manual

Firmware, images, and descriptions may vary slightly between this manual and the unit shipped. Functions and features may change depending on the firmware version. Please visit the product webpage for the most recent specifications.

1.4 Port View & Interface Connections



The Newer Technology Guardian MAXimus has multiple interfaces to work with any computer system.

eSATA Port - The utmost in speed. If you're trying to make your Newer Technology Guardian MAXimus the fastest it can be, attach an eSATA cable to this port.

FireWire 400 (1394A) Port - For backwards compatibility with older systems.

FireWire 800 (1394B) Ports - Connect one FireWire 800 port to your computer using the included cable and have an extra FireWire 800 port to add peripherals with!

USB 3.0 Port - Connect one of your computer's USB ports to the Newer Technology Guardian MAXimus here using the included cable. This port is backwards compatible with all versions of USB.

Power Port - Insert the power adapter plug here.

On/Off Switch - Turn the Guardian MAXimus on and off here.

Security Slot - Attach a security cable here to prevent theft.

1.5 Cable Connections & Quickstart Guide

Attachment of the cables is simple on any platform.

1. Plug the power input cord into the wall and to the Guardian MAXimus.
2. Connect the eSATA, FireWire 800, FireWire 400, or USB 3.0 cable - appropriate for the interface your computer supports, into the drive and computer. For best performance, use the eSATA connection.
3. Power the Newer Technology Guardian MAXimus on.

1.5 Front Status Lights

Identifying the Guardian MAXimus front status lights.

The NewerTech Guardian Maximus has 4 LED status lights on the front of the case to visually display what it is doing and to warn you of any errors.

- The leftmost LED is a blue power light. This will illuminate normally when the case is powered on.
- The middle two LEDs (HDD1 and HDD2) are green and will illuminate when hard drive #1 and hard drive #2 are being written to. They will not illuminate if the drive is not being accessed; they will turn off.
- If a hard drive fails, one of the middle two lights (HDD1 or HDD2) will turn red, indicating which drive has failed*. Upon replacement of the failed mechanism, the failed mechanism's indicator light will change from solid red to flashing red as it is being accessed to write data onto the drive, rebuilding the mirrored RAID.
- The rightmost LED is the Rebuild indicator. If a drive has failed and the Guardian MAXimus is rebuilding, the LED will flash green during the rebuild process. If the rebuild fails, the rebuild light will turn off and the failed hard drive light will illuminate red again. If this happens, please contact our support department for further assistance.



* In the event of a drive failure, rebuilding can take several hours to overnight. You may continue to use your Newer Technology Guardian MAXimus as you normally would during the rebuild process. The Guardian MAXimus does not need to be connected to your computer to rebuild, it can be disconnected but left powered on to rebuild.

* In the event of a drive failure, you must make sure the good drive with your data is in HDD1 (the drive that attaches to the bridge card) and the new drive you are writing to is in HDD2 (the drive that attaches to the SATA cable). If the good drive with your data is in HDD2, it will be overwritten and the data possibly lost. For instructions on how to disassemble your Guardian MAXimus, please visit:

http://eshop.macsales.com/tech_center/index.cfm?page=/manuals/item/nwtgmax.html

2 FORMATTING

2.1 IMPORTANT INFORMATION IF YOU PLAN ON USING YOUR DRIVE TO BOOT ON A G3, G4, OR G5 SYSTEM

If you purchased a preconfigured Newer Technology Guardian MAXimus, your new external hard drive has been formatted for the Macintosh as a Mac OS X Extended (Journaled) volume, using the **GUID*** Partition Table scheme. This means that your new drive is ready to use immediately out of the box if you have an Intel based Macintosh computer.

For your new external hard drive to provide boot compatibility (meaning you wish to run the operating system from the external drive) with Power-PC based computers (G3, G4, G5) using Mac OS X, you will need to repartition/format the drive and change the partition mapping from GUID to **APM (Apple Partition Map**)**. If you do not plan to use your new external drive as the start up drive, you do not need to perform this procedure, your new drive will work as formatted for normal external storage use and step by step instructions to do so are covered on the next pages of this manual.

Notes:

***GPT (GUID Partition Table)** - To use the disk as a boot volume on an Intel-based Mac, or to use the disk as a non-boot disk with any Mac with Mac OS X version 10.4 or later.

****APM (Apple Partition Map)** - to use the disk as a boot volume on a Power-PC based Mac, or to use the disk as a non-boot disk with any Mac. If you are using Mac OS X 10.3.9 or earlier, you must repartition and format the hard drive using this method.

Apple also has an article about repartitioning, available at:

<http://support.apple.com/kb/TS1600>

2.2 IMPORTANT INFORMATION IF YOU PLAN ON USING YOUR DRIVE WITH A PC SYSTEM

Please turn to section 3.4 and proceed from there to reformat your drive to use with a PC.

2.3 Formatting your Guardian MAXimus on a Macintosh with Mac OS X

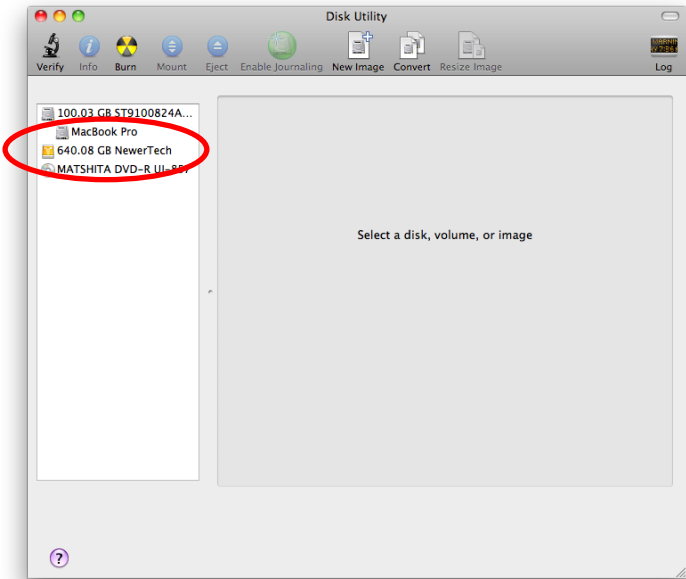
IMPORTANT NOTE: This procedure will erase all data on your hard disk drives in the Guardian MAXimus. Back up any important data before proceeding!

1



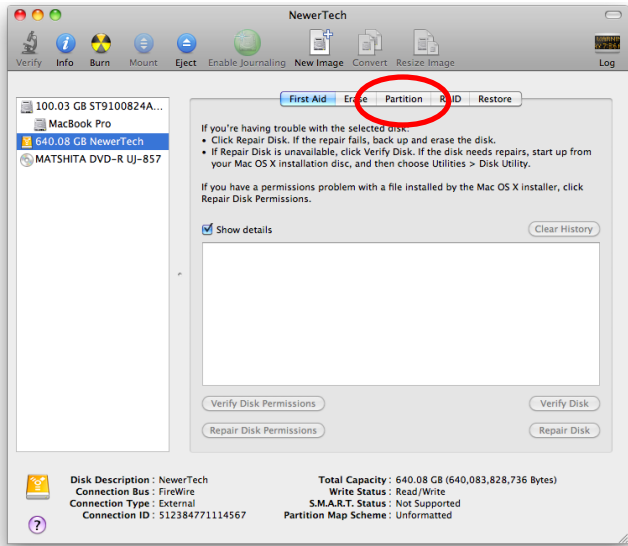
Click on the "Initialize" button.

2



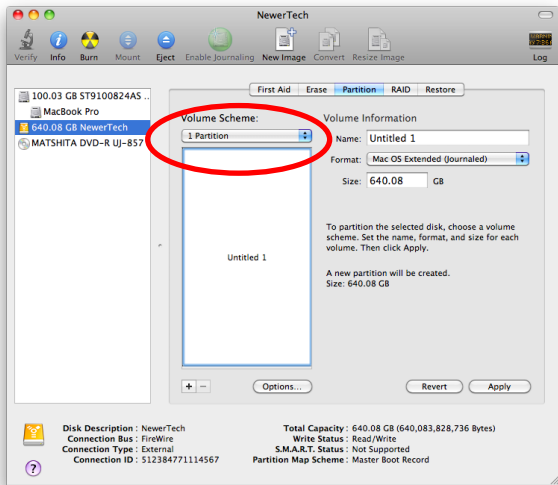
Select the device with no volumes attached to it; in this picture, that would be the 640 GB Newer Technology device. Click on the picture of the drive icon next to the text.

3



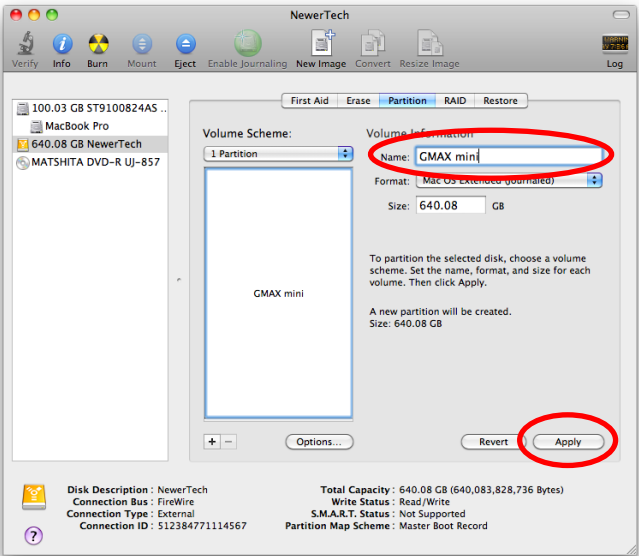
Once you’ve selected the Newer Technology device, you will notice the above change in the Disk Utility application. Click on the “Partition” tab in this picture.

4



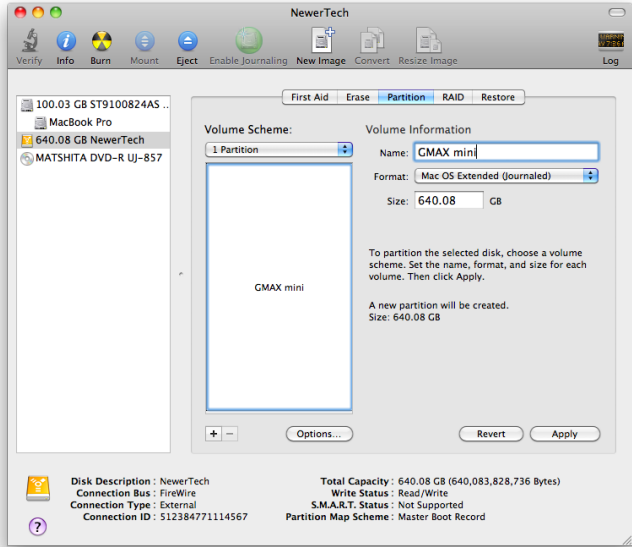
You then need to choose how many partitions you wish your Newer Technology Guardian MAXimus to have. For ease of use we’re selecting one partition here but of course you could select more if you wish to have multiple volumes created. Simply use the pulldown menu under Volume Scheme to create more partitions.

5



Choose a name for the volume. You will need to repeat this step for each volume if you selected multiple partitions. Click Apply to finish.

6



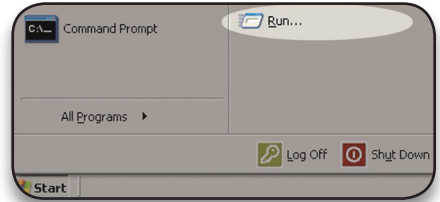
You will be asked to confirm that you wish to format the drive - agree, and then after a few moments, partitioning will complete and the Newer Technology Guardian MAXimus volume will mount on your desktop. You can quit Disk Utility, you're all set!

2.4 Removing the GUID Partition Scheme

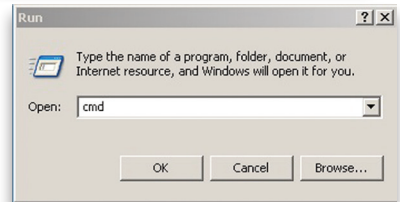
Only for XP, 2000, ME and earlier. (XP 64-BIT, Vista & Windows 7 can continue to the next section)

If you purchased a preconfigured solution from NewerTech, it comes preformatted using the Mac OS HFS+ file system on a GUID drive partition. Unfortunately, this is not readable by Windows without special software. If you wish to use your storage solution on a computer running Windows, you will need to repartition and reformat using the following instructions.

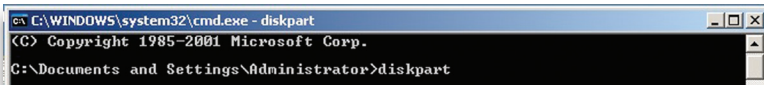
① Go to the DOS command prompt by selecting "Run" from the Start Menu.



② Type in **cmd** in text box, and hit the "OK" button.



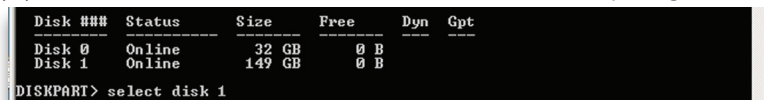
③ Type **diskpart** and hit enter.



④ Type **list disk** and hit enter.



⑤ Type **select disk x** replacing x with the number of the disk you want to reformat. (Typically, you will see an asterisk (*) under "GPT" for the disk requiring formatting.)



WARNING: The **clean** command will destroy ALL data on the disk you run it on!!!
Be sure there is **nothing** you need to keep on your drive before running any of these commands.

⑥ Type **clean** and hit enter.



⑦ Type **exit** and hit enter.

⑧ Close the command prompt window. **You may now proceed with formatting the drive.**

2.5 Formatting your Guardian MAXimus on Windows 2000 and later

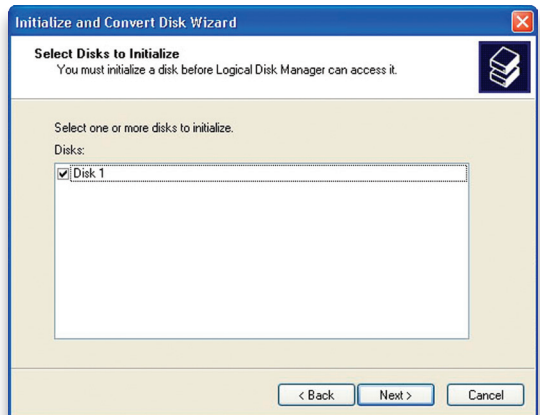
Instructions for other operating systems can be found at <http://www.newertech.com/format>.

① With the drive connected to the computer and powered on, right click on the “My Computer” icon and select “Manage” from the menu. The “Initialize and Convert Disk Wizard” window should appear.

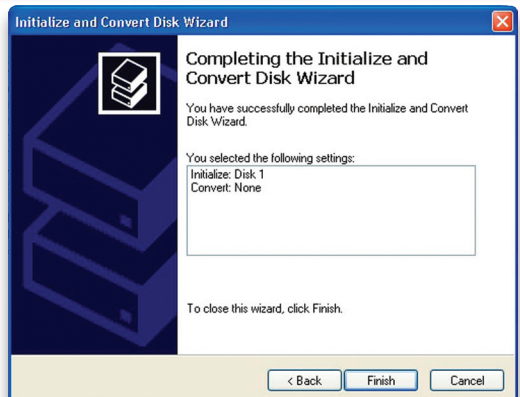


If the Wizard does not appear, expand the Storage menu by clicking on the plus (+) sign. Then, right click next to the disk number of the drive that you have just connected and click Initialize to bring up the Wizard.

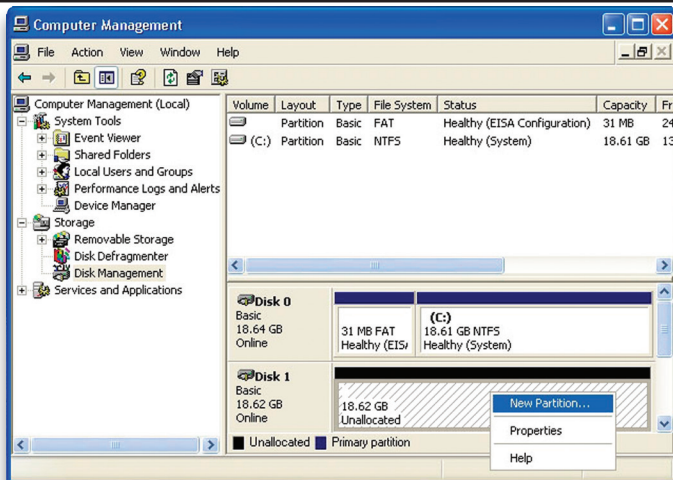
② In the next window, there should be only one drive listed. That will be the drive that you connected via eSATA, FireWire or USB. Make sure the box next to the drive name is checked and click “Next.”



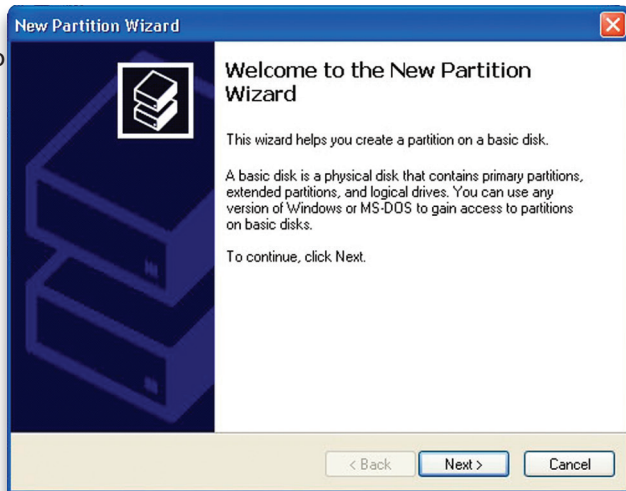
③ The Wizard will perform its tasks, and you will get the following screen. You may click “Finish.”



④ Your drive will appear similar to how Disk 1 does below. Notice that the space on the lower right reads as “Unallocated.” Right click in this space and choose “New Partition.”



⑤ The “New Partition Wizard” will launch. Click “Next” to continue.



⑥ Specify your partition type as “Primary,” and click “Next.”

Select the partition you want to create:

- ☒ Primary partition
- ☐ Extended partition
- ☐ Logical drive

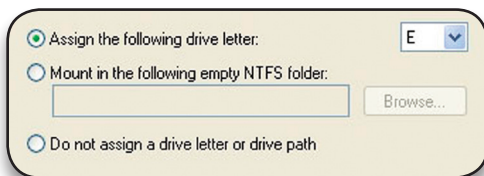
⑦ The wizard will display the maximum partition size for your drive. It is strongly recommended that you **do not** change the default value. Click “Next”

Maximum disk space in megabytes (MB): 19069

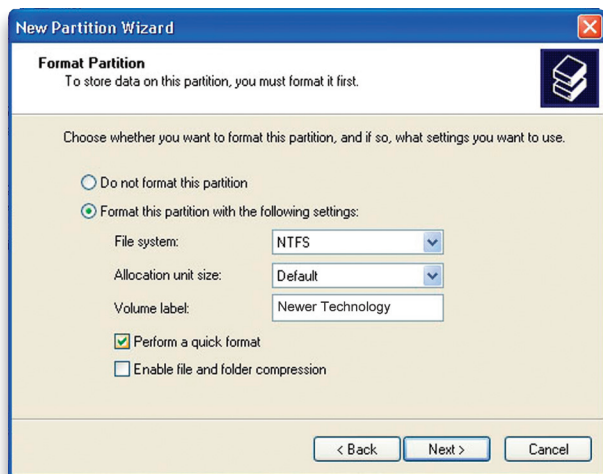
Minimum disk space in MB: 8

Partition size in MB:

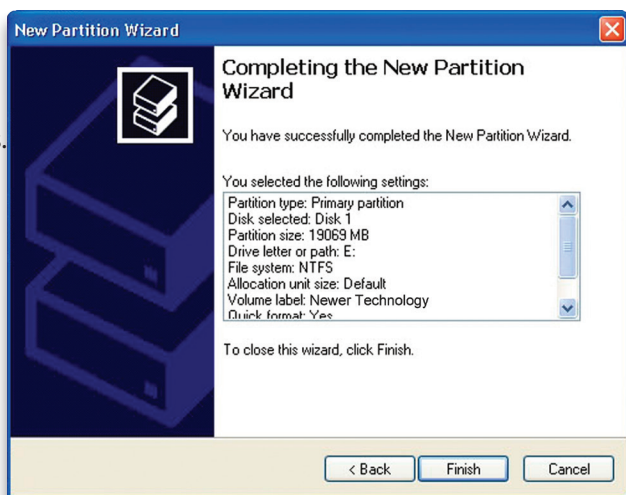
⑧ If you like, you can specify the drive letter designation for your new drive. Otherwise, one will automatically be assigned. Click “Next.”



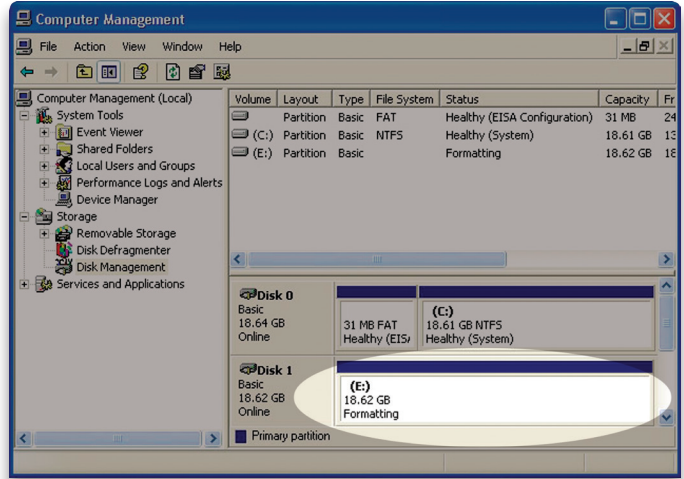
⑨ Before you can use the drive, it must be formatted. On most systems running Windows 2000 or later, it is advisable to specify the file system as NTFS. Leave the Allocation unit size as “Default,” and feel free to give the drive whatever name you prefer. Be sure to check the box “Perform a quick format.” If you do not, it will likely take several hours for your drive to format. Click “Next.”



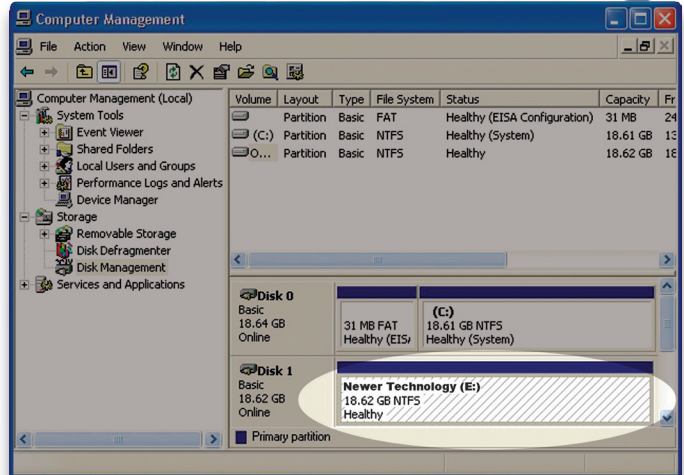
⑩ At the end of the Wizard, you will see a summary of the information that you specified during the previous steps. Click “Finish.”



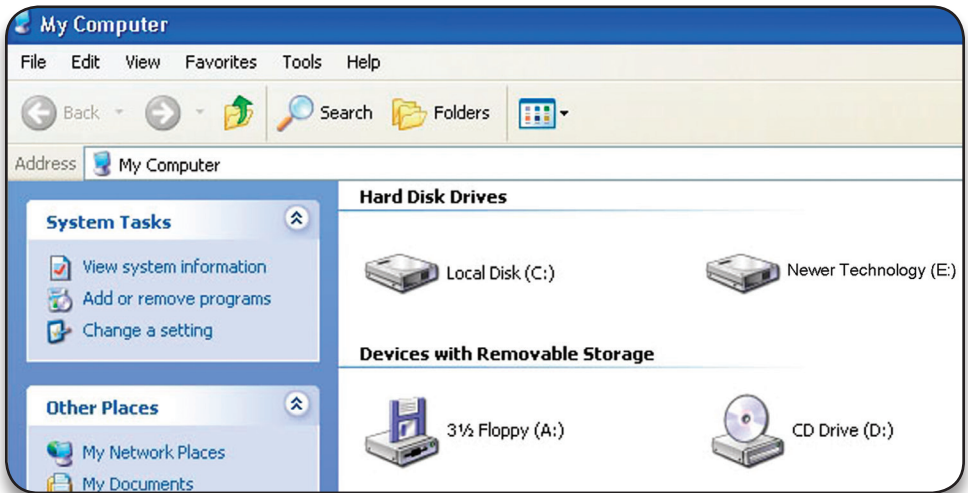
①① Once you have finished with the formatting wizard, you will see that your new drive (represented as “Disk E” in this case) will display a message of “Formatting.” This should only take a couple of minutes if you chose the quick format option.



①② After a moment or two, the drive's status will change from “Formatting” to “Healthy.”



①③ At this point, you may close the Computer Management window. Your drive is ready to use and can be found in “My Computer.”



2.6 MacDrive 8

Using your new Storage Solution on both Macs and PCs?

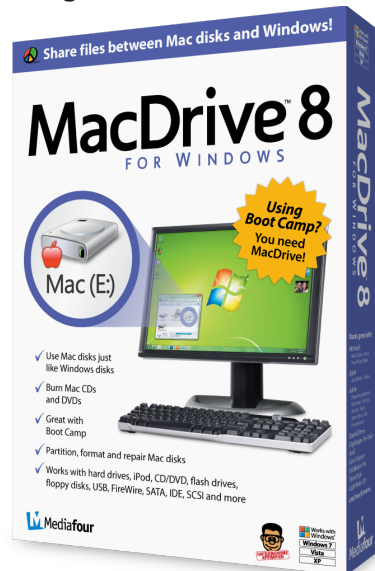
MacDrive takes the guesswork out of sharing files. Whether you are transferring files between home and the office, a class room lab and your dorm room or even on the same computer, MacDrive makes it painless.

In fact, you'll hardly know MacDrive is working. Once installed MacDrive will automatically give you access to any Mac disk you pop into your computer. MacDrive even puts an “apple” icon on the Mac disk, just to keep things clear.

You can access files on the Mac disk just like you would with a Windows formatted disk. Open files from the disk or from within a program. Mac files automatically get the right icons and file name extensions under both Windows and Mac OS. Works great with software from Microsoft, Adobe, Quark, FileMaker, Avid, Digidesign, Corel, NewTek and more.

You can find MacDrive 8 at:

<http://eshop.macsales.com/search/macdrive>



3 TROUBLESHOOTING & TIPS

3.1 Troubleshooting

Some of the most simple problems can be traced to power, or connectivity issues.

Begin your troubleshooting by verifying that power is plugged into the external storage solution, and if connected to a power strip. Make sure that the power is turned on at the switch on the strip.

Then, simply verify that your cables (both ends!) are properly plugged into the computer and storage solution. If they are, and the storage solution is still not working properly, try connecting to another interface such as the USB connection and see if the device works properly.

3.2 Tips

To properly dismount any connected hard drives from your computer, you need to follow a few simple steps.

• For Macintosh systems:

For the safe removal of your drive and to assure that no data is lost, always eject or unmount the drive from your operating system before powering off.

There are two methods to unmount disks with Macintosh systems. Either drag the icon for the hard disk you wish to dismount to the trash can, or click the eject icon next to the hard disk name in under the "DEVICES" tab in the sidebar in any finder window.

• For Windows systems:

1. Go to the System Tray (located in the lower right corner of your screen). Click on the Eject icon (a small green arrow over a hardware image).
2. A message will appear, detailing the devices that the Eject icon controls. i.e. "Safely remove..." Click on this prompt.
3. You will then be given the following message. "Safe to Remove Hardware". It is now safe to unhook the Newer Technology Guardian MAXimus.

General information:

- Do not expose the product to water or humid conditions.
- Do not cover the enclosure's ventilation holes.
- In order for the computer to access volumes larger than 2TB, both the hardware and Operating System need to support large volumes (e.g.: Windows Vista 32bit/64bit or Mac OS X 10.4 and above).

4 APPENDIX

4.1 FAQ

Q: How do I format my storage solution?

A: OWC has detailed instructions online for most popular operating systems, located at: <http://www.newertech.com/format>

Q: What file system should I choose when formatting my drive?

A: This will depend on how you want to use the drive, but in general, we recommend:

- Mac OS X - HFS + (Mac OS Extended)
- Windows 2000/XP/Vista
- For cross-platform compatibility, FAT32 is compatible, but single file sizes are limited to 4GB. Other options using 3rd party software exist but are not covered here.

Q: Why does the LED indicator for one of the drives light up red?

A: A red LED is a warning indicator, you either have a failed hard drive, or no hard drive is installed in the drive bay. Replace the hard drive to correct the problem.

Q: Why does the LED indicator to the right of the drive activity lights light up orange?

A: If the orange LED is lit, a rebuild is performing or the device is being reformatted. Normally this indicates that you had a failed hard drive, or data was written out of sync and the rebuild is correcting the error.

Q: How many drives can fail before I lose my data?

A: Since this is a RAID-1 Mirrored solution, you can have 1 drive fail without losing any data. If both hard drives fail, you will lose your data. The Newer Technology Guardian MAXimus will alert you using it's LED lights on the front of the enclosure that a drive has failed by turning RED. Replace that hard drive immediately to avoid losing data.

Q: Will the hard drives spin down when my computer goes into to sleep or stand-by mode?































A: Yes, they will spin down to a low power mode to save energy. It will take about 10 seconds to access your data after being in sleep or stand-by mode.

Q: I have an older Intel based Mac - can I use my NewerTech Guardian MAXimus as a boot drive?

A: Yes! Older (Pre-2008) Intel Mac systems require the use of USB for booting but it certainly will work. Post-2008 Intel Mac systems can boot via either USB or FireWire.

(question continued)

The list of systems that can boot via FireWire are as follows:

Machine Model	Release Date	OS Version	Boots FireWire	Boots USB
Mac Pro 1,1	Aug 1, 2006	10.6.3		
Mac Pro 2,1	Apr 1, 2007	10.6.3		
Mac Pro 3,1	Jan 1, 2008	10.6.3		
Imac 5,1	Sep 1, 2006	10.6.3		
Imac 7,1	Aug 1, 2007	10.6.3		
Imac 8,1	Apr 1, 2008	10.6.3		
Macbook 1,1	May 1, 2006	10.6.3		
Macbook 3,1	May 1, 2007	10.6.3		
Macbook 4,1	Feb 1, 2008	10.6.3		
Macbook Pro 1,1	May 1, 2006	10.6.3		
Macbook Pro 2,1	Oct 1, 2006	10.6.3		
Macbook Pro 3,1	Jun 1, 2007	10.6.3		
Macbook Pro 4,1	Feb 1, 2008	10.6.3		
Mac Mini 1,1	Feb 1, 2006	10.6.3		
Mac Mini 3,1	Mar 1, 2009	10.6.3		

4.2 About Data Backup

To ensure that your files are protected and to prevent the loss of your data, we strongly suggest that you keep two copies of your data: One copy on your Newer Technology Guardian MAXimus and a second copy on either your internal hard drive or another storage medium, such as an optical backup, or on a second external hard drive.

Any data loss or corruption while using the Newer Technology Guardian MAXimus is the sole responsibility of the user, and under no circumstances will Newer Technology be held liable for compensation or the recovery of any lost data.

5 CUSTOMER SERVICE

5.1 Before Contacting Customer Service

- Read this manual and review Chapter 4: Troubleshooting & Tips.
- Try to confirm the problem is with the hard drive. If you have a second computer, move the enclosure to that system and verify that the solution does not function with that machine.
- Visit our tech center for more support suggestions, including FAQs.
<http://www.newertech.com/support>

If you still need support, please have the following available to you:

- The serial number of the enclosure
- Your invoice number
- What operating system you are using
- Which kind and model of computer you are using

All of this will help speed your support contact along.

5.2 Support Hours Of Operation

8AM - 10PM CST Monday - Friday

9AM - 4PM CST Saturday

By Telephone - (815) 308-7601

Live Chat is available during normal business hours as well. Visit
<http://www.newertech.com/support> for more information.

Or, you can email. Submit your email at:
<http://www.newertech.com/support>

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The material in this document is for information only and subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, Newer Technology assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein. Newer Technology reserves the right to make changes or revisions in the product design or the product manual without reservation and without obligation to notify any person of such revisions and changes.

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's Guide carefully, and follow the correct procedure when setting up the device.
- Do not open your hard drive or attempt to disassemble or modify it. Never insert any metallic object into the drive to avoid any risk of electrical shock, fire, short-circuiting or dangerous emissions. Your hard drive contains no user-serviceable parts. If it appears to be malfunctioning, have it inspected by a qualified Other World Computing Technical Support representative.
- 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:

- Do not expose the enclosure to temperatures outside the range of 5° C to 40° C (41° F to 104° F). Doing so may damage the drive or disfigure its casing. Avoid placing your drive near a source of heat or exposing it to sunlight (even through a window). Conversely, placing your drive in an environment that is too cold or humid may damage the unit.
- Always unplug the hard drive 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.
- Use only the power supply shipped with the device.
- Do not use the hard drive 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 drive near sources of magnetic interference, such as computer displays, televisions or speakers. Magnetic interference can affect the operation and stability of your hard drive.
- Do not place heavy objects on top of the drive.
- If you detect a problem, consult the Troubleshooting section in this manual.
- Protect your hard drive from excessive exposure to dust during use or storage. Dust can build up inside the device, increasing the risk of damage or malfunction.
- Other World Computing recommends the use of normal glass cleaning products to keep the high lustre finish at its finest with this product. Be sure not to get any moisture inside the holes and if you do, allow time to air dry before use.
- Do not block the ventilation outlets on the rear of the drive. These help to keep your drive cool during operation. Blocking the ventilation outlets may cause damage to your drive and cause an increased risk of short-circuiting or fire.

