

rocstor®

store your future



ROCPRO 225 User Manual

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IMPORTANT NOTICES

Safety Notices

- The warranty is void if an unauthorized person attempts and/or repairs the hard disk drive.
- Read all Manuals and instructions carefully before using the device.
- Do not spill any liquid or insert any object into the device.
- Use the device within the specifications indicated, including but not limited to: power requirements, temperature, humidity, sunlight and magnetism from other devices such as computers and televisions.
- Please visit the Rocstor website, www.rocstor.com for further information concerning specifications and use of the device.

General Notices

- Consistently make multiple backup copies of your data for your protection. Hard disk drives are subject to failure at any time.
- Rocstorage, Inc. shall not be held liable for loss of data or the restoration or recovery of data on the device. Please view complete Limited Warranty Information in this manual or on the Rocstor website (www.rocstor.com) for further details.

Capacity Disclaimer

Actual accessible hard drive capacity will indicate up to 10% lower than stated under different Operating Systems and formatting.

The storage volume is measured in total bytes before formatting. References to round numbers of gigabytes or terabytes are an approximation only. For example, a disk drive labeled as having 500GB (gigabytes) has space for approximately 500,000,000 bytes before formatting. After formatting, the drive capacity is reduced by about 5% to 10% depending on the operating system and formatting used.

Care and Handling

The following instructions concern the proper care and handling of Rocpro 225 Drives. Please take a moment to review these instructions.

- As with any storage solution, it is recommended that all data be backed up regularly.
- Ensure that you follow the proper removal procedure to disconnect the Rocpro drive.
- Do not move or disconnect this device from your computer while it is reading or writing data. This may cause damage to the Rocpro drive.
- Do not place this device near a heat source or expose it to direct flame.
- Do not place the device near any equipment generating strong electromagnetic fields. Exposure to strong electromagnetic fields may cause the device to malfunction or data to be corrupted.
- Do not drop or cause shock to your Rocpro drive.
- Do not spill any liquid or insert any object into the device.

- Do not attempt to disassemble and service the Rocpro drive during the warranty period.
- Please read the Safety Notices and Limited Warranty information in this Manual and on the Rocstor website (www.rocstor.com) for further details.

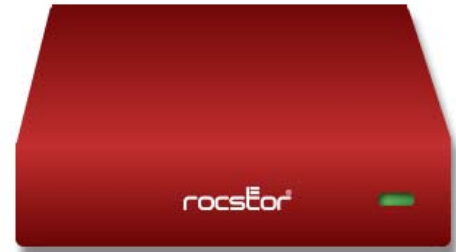


GENERAL

Introduction:

ROCPRO 225 –USB 2.0 (1.1)

The new generation of Rocpro external SATA Hard Drives delivers extraordinary performance and reliability for both Mac and PC users. The new Rocpro 225 contains a fast SATA high capacity 3.5" drive in a stylish and unique aluminum case that can be stacked or mounted vertically. With its built-in power supply, fan-less and quiet operation, the Rocpro 225 can be easily moved from one desktop environment to another using the provided carrying case.



Choose Rocstor drives and store your future.

Box Contents

- External hard disk drive
- Stand for vertical mounting
- USB cable
- AC power cord
- Installation user Guide
- Carrying case



ROCPRO 225



Enclosure Stand



Carrying case



USB cable



AC cord



User guide/ S/W CD

Minimum System Requirements

Mac Users:

Hardware: USB (1.1 or 2.0) port(s.)

Mac: PowerPC or Intel processor running Mac OS 9, X, Leopard

Recommended memory: 512 MB RAM

Window Users:

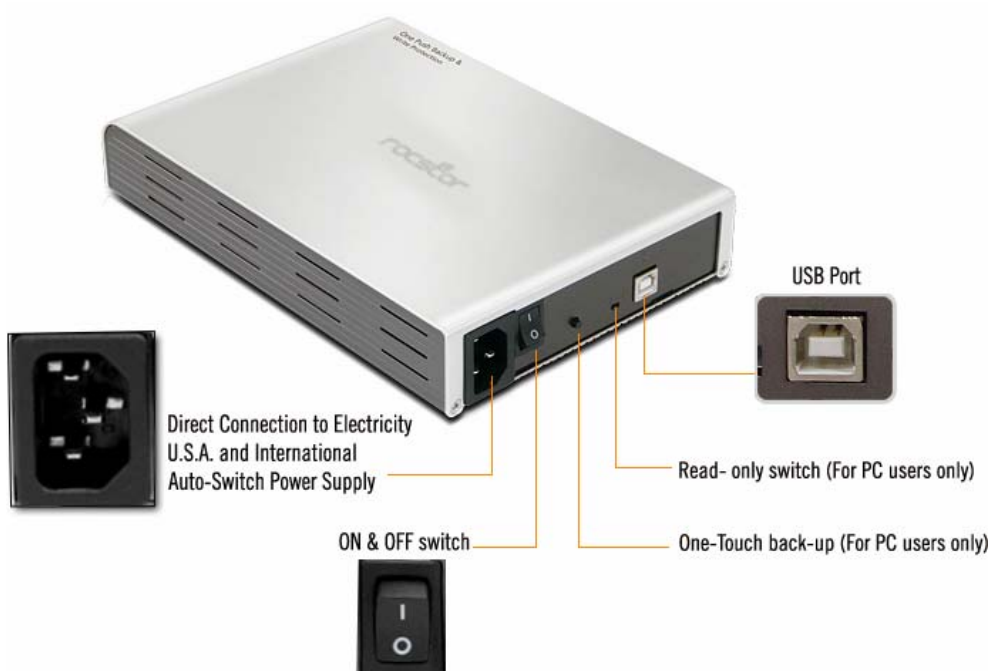
Hardware: USB (1.1 or 2.0) port(s.)

Operating Systems: Microsoft Windows 2000, Me, XP, Vista

Recommended memory: 512 MB RAM

Connectors

- USB 2.0 port x1
- Standard AC power input connection
- ON/OFF power switch



QUICK INSTALLATION

How to Connect the Interface Cables - Connecting the Drive

1. Turn ON your computer and wait until it fully boots up to load all programs.
2. Connect one end of the power cord directly to the Rocpro 225 and the other end to an AC outlet, surge protector or battery Backup (UPS).



3. Using USB interface cable, connect one end of the cable to the Rocpro 225 and the other end to the computer.
- 4.



5. Turn the Rocpro 225 Hard Drive switch ON.
6. The Hard drive is preformatted for Plug-and-Play operation. After a few seconds a Rocstor HD icon will show on the "My Computer" folder under the Windows OS. Under the Mac OS, the Rocport HD will appear on the "Desktop."
7. Click (double click) on the Rocstor HD icon to access the drive.

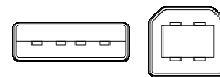
Cable Types:

USB supports three data transfer rates:

- USB 2.0: A Hi-Speed (USB 2.0) rate of 480 Mbits/s (60 MB/s).
- USB 1.1: A **Full Speed** rate of 12 Mbits/s (1.5 MB/s).
- USB 1.0: A **Low Speed** rate of 1.5 Mbits/s (187 KB/s)



USB
Mini "B"



Installing Your Drive

All Rocstor hard drives are formatted as blank FAT32 (32-bit file allocation table) volumes that are compatible with most modern Windows and Macintosh operating systems. To begin using your Rocstor drive, simply connect a data cable and power cord. There's no need to shut down your computer because your Rocstor drive is hot-pluggable. Just plug it in and it's ready to use.

The drive can connect directly to any available USB port on your computer.

You may also use the drive for additional storage or as a startup device (bootable) use the cable USB cable provided

Rocpro as a bootable device

If you intend to use the drive as a startup device, check the documentation that came with your computer to confirm compatibility with the various interfaces. PowerPC-based Macs require FireWire connections for startup disks, whereas Intel-based Macs can use either FireWire or USB connections.

Furthermore, using the drive as a startup device requires installing an authorized copy of the Windows or Mac operating system (available separately from Microsoft and Apple, respectively). To install the Mac OS 9 or OS X, you must reformat the drive as a Mac OS Extended volume with Disk Utility. An Intel-based Mac cannot start from a device formatted on a PowerPC-based Mac or vice versa.

Disconnecting Your Drive

Never disconnect or turn off an external drive when its activity light is ON. External drives must be properly unmounted (or disconnected) to avoid data loss and possible damage to the hard disk drive or computer.

PC

The easiest ways to safely unmount an external hard drive on your PC is to right-click the device removal icon next to the clock in the system tray. Then choose Safely Remove Hardware. Choose the external device you want to remove, and then click Stop. An alert will notify you if the drive is in use by an application. If in use close any open documents or applications on the drive and try again. Windows will display an alert when you can safely disconnect or turn off the drive.

Mac

The easiest way to safely unmount an external hard drive is to drag its Finder icon to the Trash. An alert will notify you if the drive is in use by an application. Close any open documents or applications on the drive and try again. When the drive's icon no longer appears on the Finder's Desktop and the drive's activity light is green, you can safely disconnect or turn off the drive.

Reformatting Your Drive

As mentioned previously, all Rocstor hard drives are formatted as blank FAT32 volumes that are compatible with most modern Windows and Macintosh operating systems. However, you can use your normal disk management tools to erase or reformat the drive if needed. For example, Windows users may want to reformat the drive as an NTFS (new technology file system) volume, or Mac OS X users may wish to reformat the drive as a Mac OS Extended (Journal) or UFS (Unix file system) volume.

Please note that all of your data will be lost if the volume (Hard Drive) is formatted or reformatted.

Reformatting via PC (Window based computers)

Right-click the Rocpro drive in the “My Computer” folder, then choose Format. In the dialog window that appears, choose the desired capacity, file system and allocation unit size and then click Start.

Reformatting via Mac

Open Disk Utility (/Applications/Utilities). Select the drive in the list at the left and then click the Erase tab. Choose the desired volume format, specify a name and then click Erase.

PARTITIONING AND FORMATTING THE ROCPRO DRIVE ON A MAC OS

All Rocstor drives are factory formatted with FAT32, unless otherwise stated on the box.

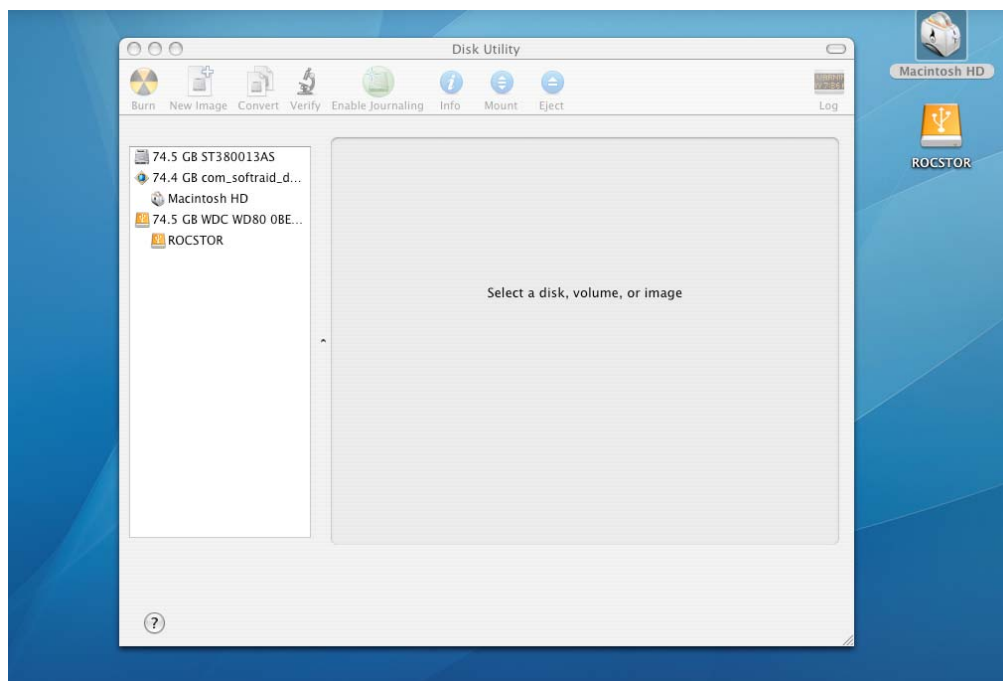
WARNING: Formatting and Partitioning the Rocpro Drive will destroy all of its data. To protect your data, back it up before formatting or partitioning this device.

IMPORTANT NOTES:

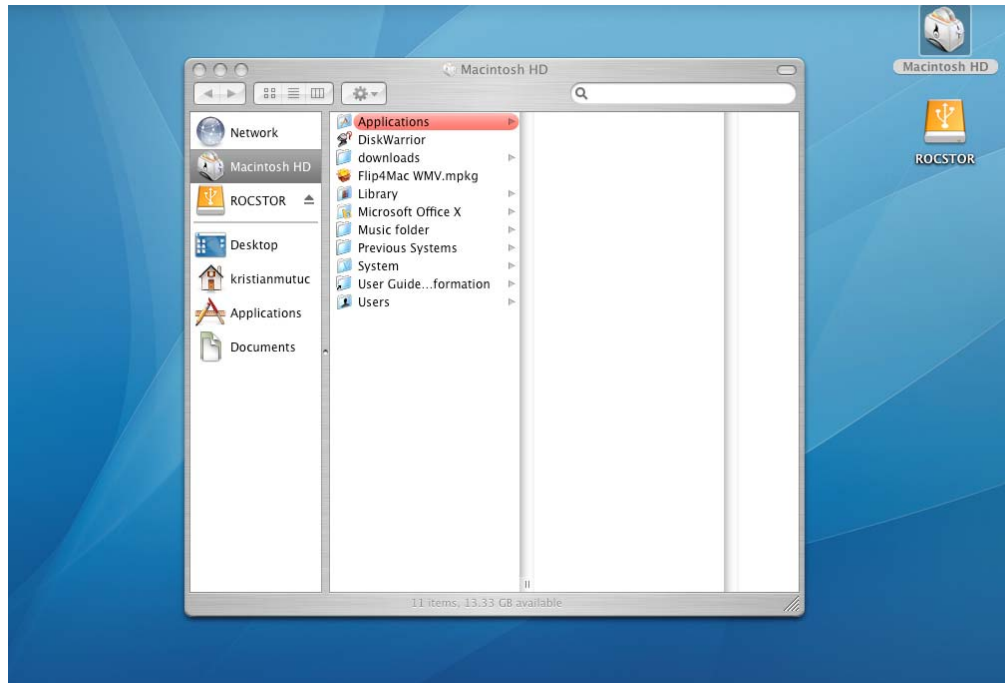
1. All programs should be closed before beginning.
2. Connect the Rocstor hard disk drive to your computer using the appropriate cables.
3. Turn ON the Rocstor hard disk drive. Some Rocstor HDs are bus-powered and turn ON automatically. Look for a Blue or Green light.
4. "Click" means left click. "Right Click" will be so labeled.
5. Some computers are set so a single "click" will perform the task, such as opening a window. Depending on your mouse setting, you may have to double click to get to the next window. If a single click does not open the next window, please double click.

INSTRUCTIONS FOR PARTITIONING AND FORMATING FROM FAT32 to HFS+:

1. Connect the Rocstor drive to the computer via a port.
2. The drive will appear as an icon on the Desktop on the middle right side. The icon will represent the method of connection (USB).



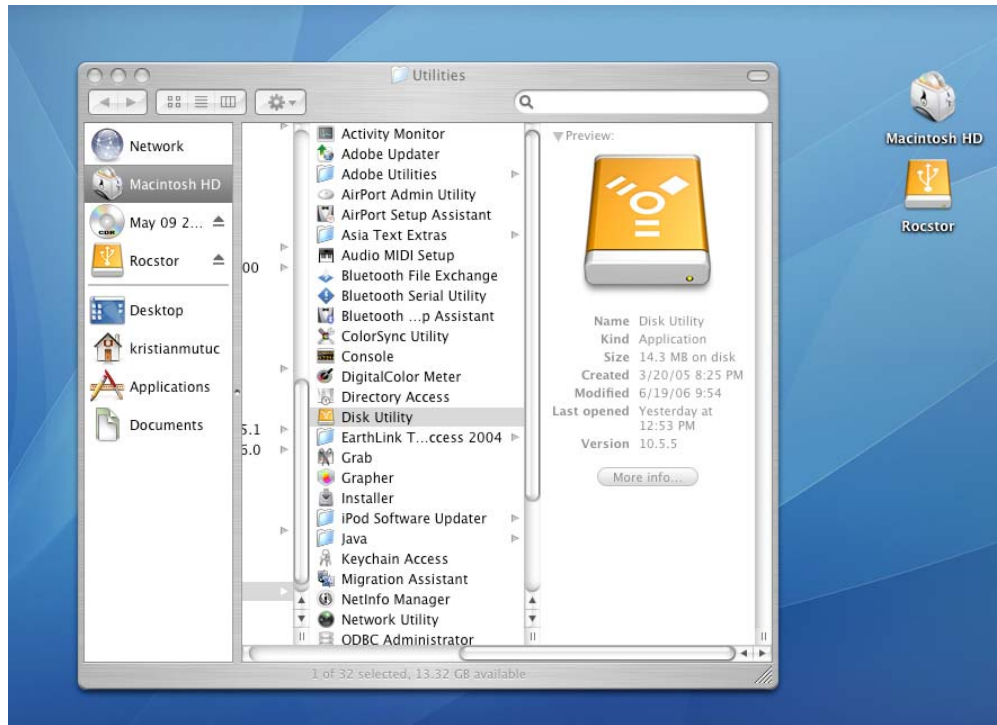
3. Once the icon appears on the “Desktop” click on the “Macintosh HD” icon.



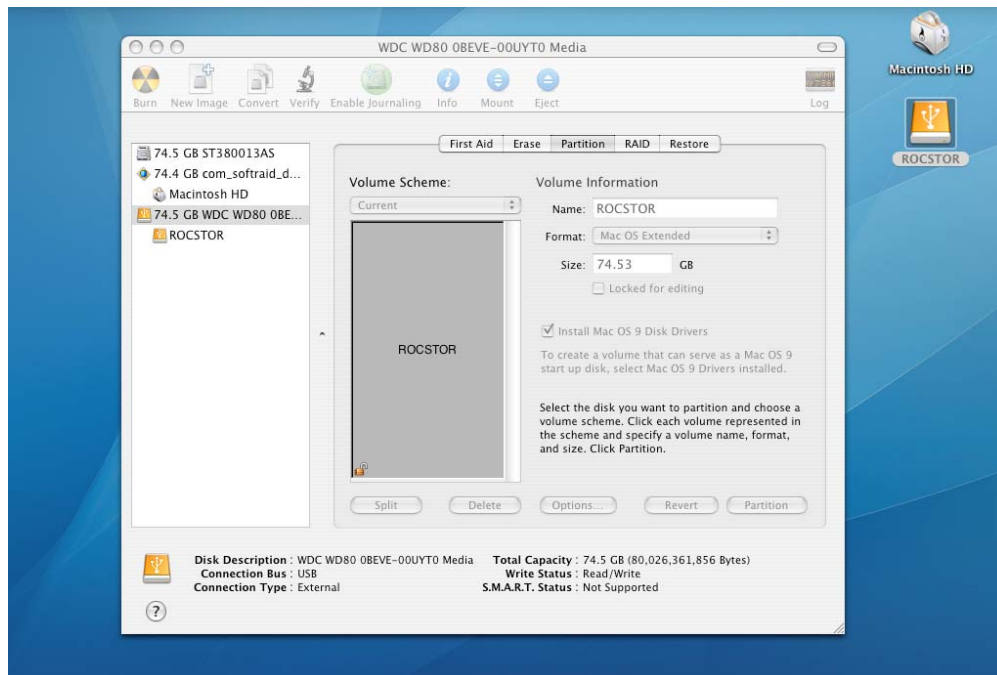
4. In the “Macintosh HD” menu, click on the “Applications” icon.
5. In the “Applications” menu, click on the “Utilities” icon.



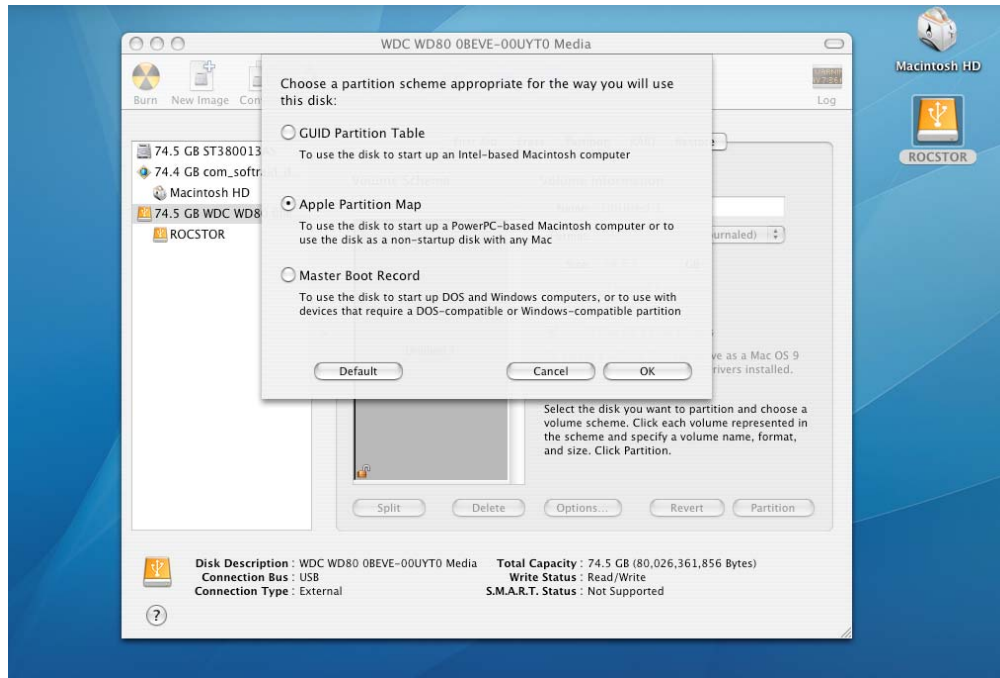
6. In the “Utilities” menu, click on the “Disk Utility” icon.



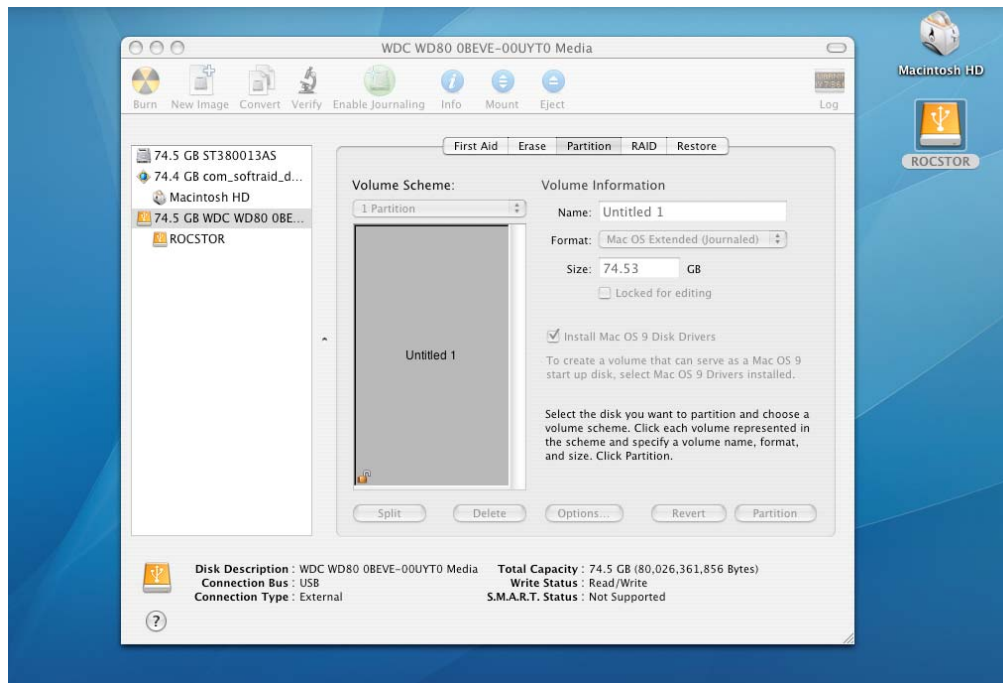
7. On the left side of the “Disk Utility” menu is a list of available drives. One will be the Rocstor drive. Click on the icon showing the disk capacity.



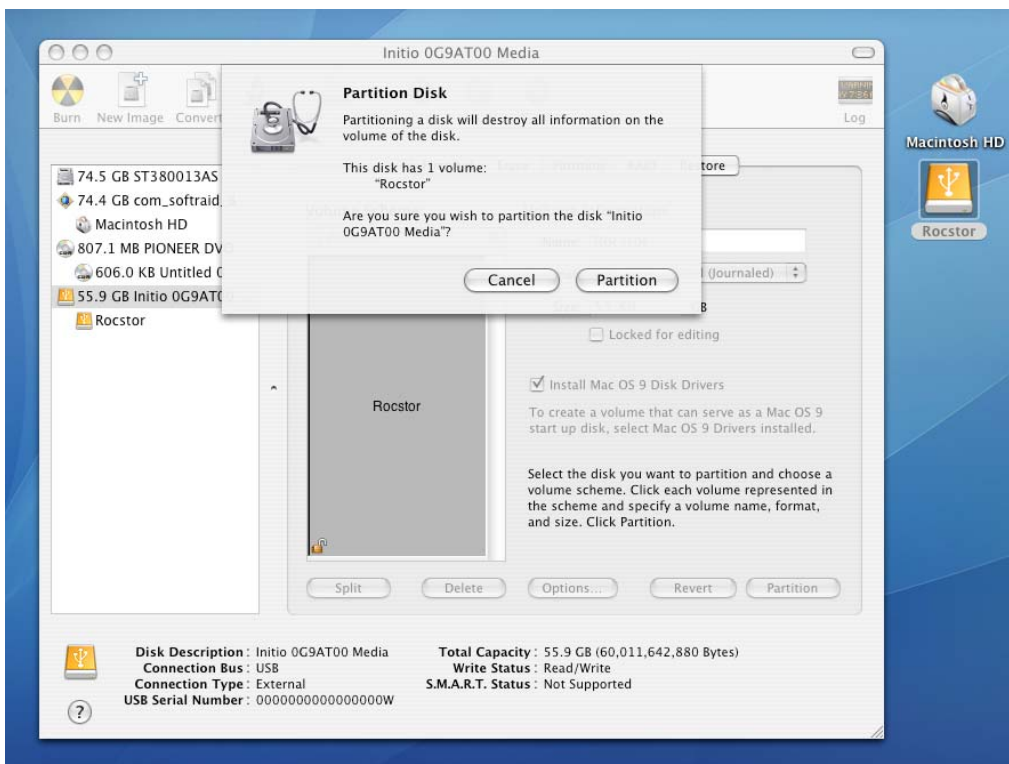
8. You are now in the Rocport menu. Click on the "Partition" tab and then click the "Current" tab under "Volume Scheme." A drop down "Partition" menu will appear.
9. In the "Partition" menu, you may select any number of partitions available under "Volume Scheme."
10. If you are using Panther proceed to #13 below.
11. If you are using Tiger, click on Options on the lower center of the window. Select the Partition Scheme for your Rocstor drive. Suggest you select "Apple Partition Map" then click OK.



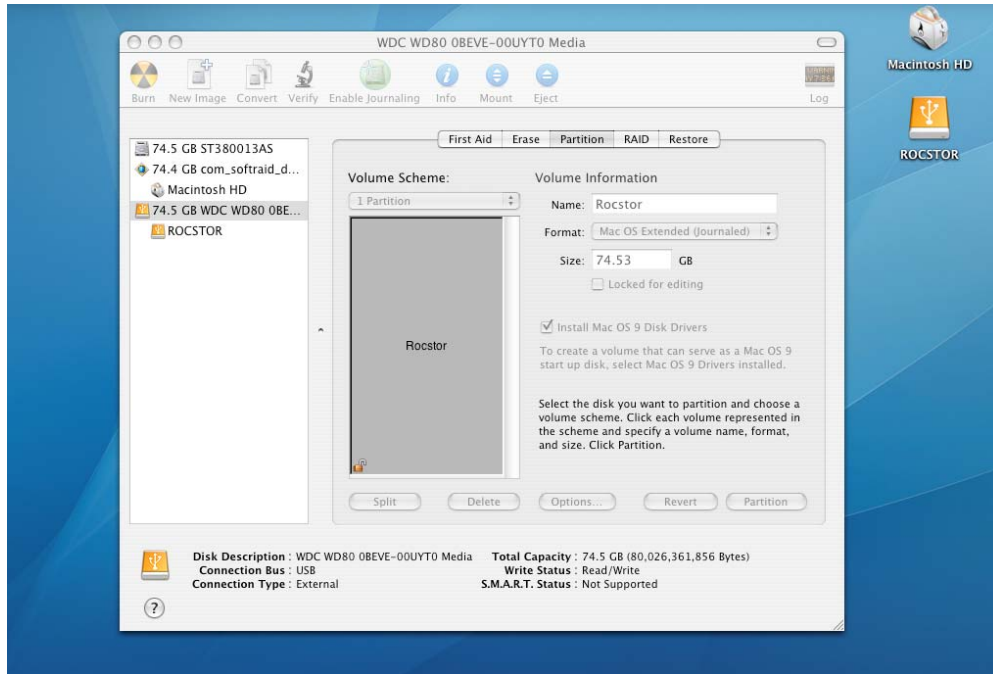
12. Volume Information: select a name for your drive.



13. Format: Click on either the “Format” area or the Blue up/down arrows. Select Mac OS extended (journal).
14. After selecting the type of format, click the “Partition” tab in the lower right of the screen. On the next screen, “Partition Disk,” click “Partition” again.



15. The drive will begin to format and upon completion; the same icon that first appeared on the Desktop will reappear with your designed name on the Desktop.



16. Exit.

PARTITIONING AND FORMATTING THE ROCPRO DRIVE ON WINDOWS 2000, XP AND VISTA

All Rocstor drives are factory formatted with FAT32.

WARNING: Formatting and Partitioning the Rocpro Drive will destroy all of its data. To protect your data, back it up before formatting or partitioning this device.

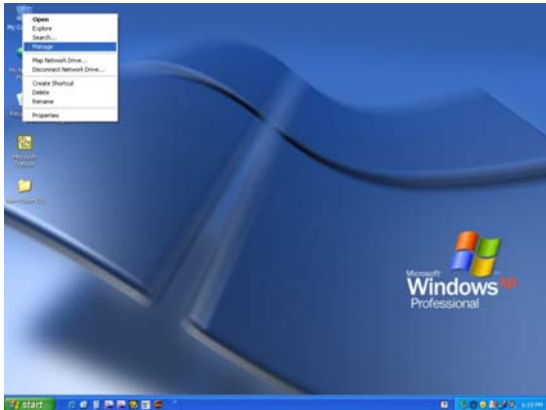
IMPORTANT NOTES:

1. All programs should be closed before beginning.
2. Connect the Rocstor hard disk drive to your computer using the appropriate cables.
3. Turn ON the Rocstor hard disk drive.
4. The initial goal is to reach the Control Panel. If you know how to get there, skip this section and go directly to Instruction 1 (Instructions for Partitioning and Formatting from FAT 32 to NTFS.) A fast way of reaching "Disk Management" is to right click "My Computer" icon and click on "Manage" in the drop down menu. The next window is "Computer Management." In the left menu, click "Disk Management."
5. The ultimate goal is to reach Disk Management. If you know how to get there, skip this section and go directly to Instruction 4 (Instructions for Partitioning and Formatting from FAT 32 to NTFS).
6. Due to different views that are possible on Windows operating systems (2000, XP, Vista), we will provide various ways of reaching the Control Panel.
7. "Click" means left click. "Right Click" will be so labeled.
8. Some computers are set so a single "click" will perform the task, such as opening a window. Depending on your mouse setting, you may have to double click to get to the next window. If a single click does not open the next window, please double click.

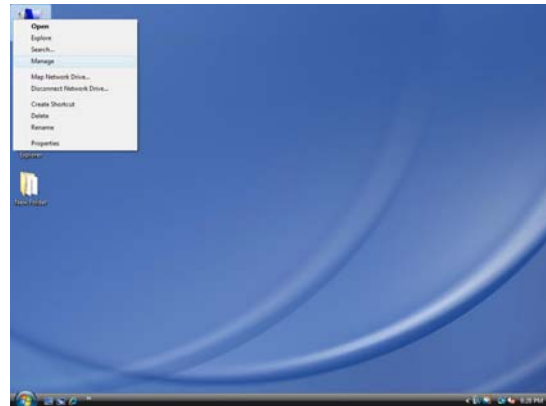
DIFFERENT WAYS TO GET TO THE CONTROL PANEL:

(You may use any one of the following methods)

1. If the icon “My Computer” shows on your desktop, click or double click on the icon. Under “Other Places” click on “Control Panel.”

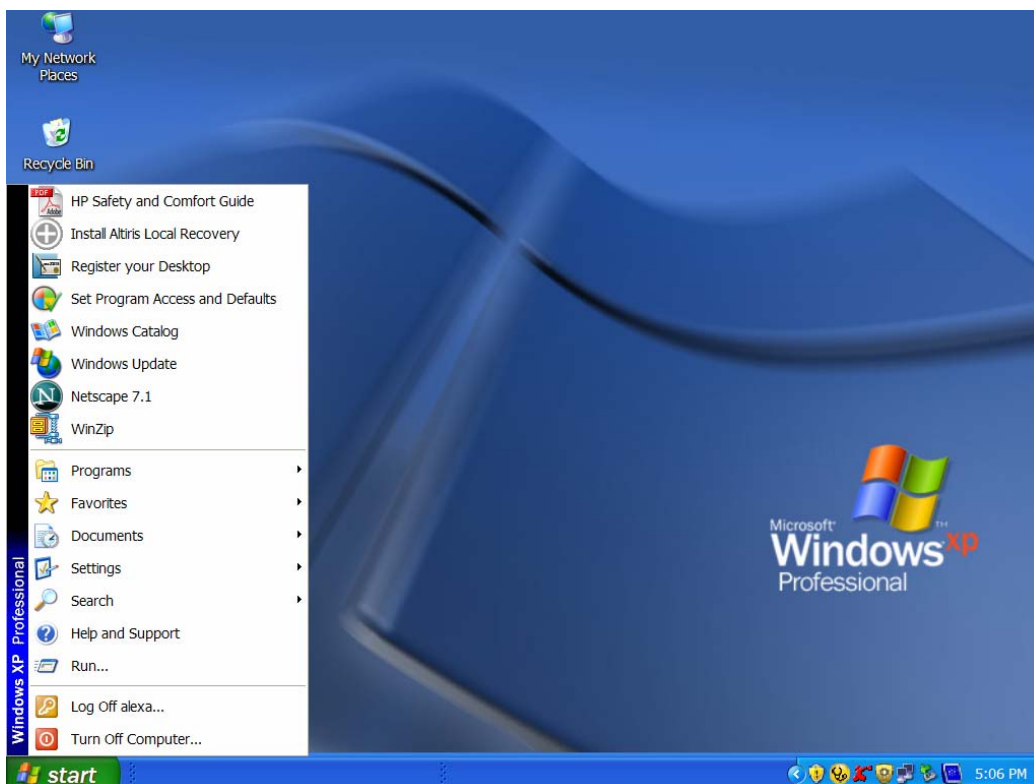


Under Windows XP

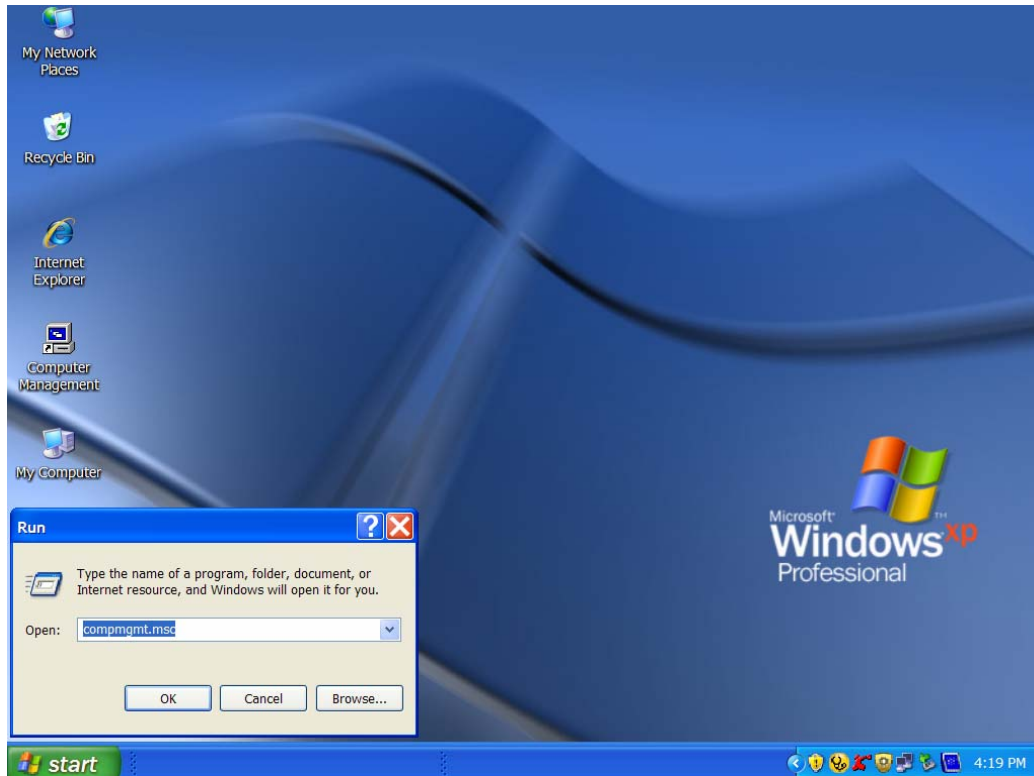


under Vista OS

2. If the icon “My Computer” does not show on your desktop, click on the Start icon on the lower left of your screen. If the Control Panel link is displayed, click on the Control Panel link.

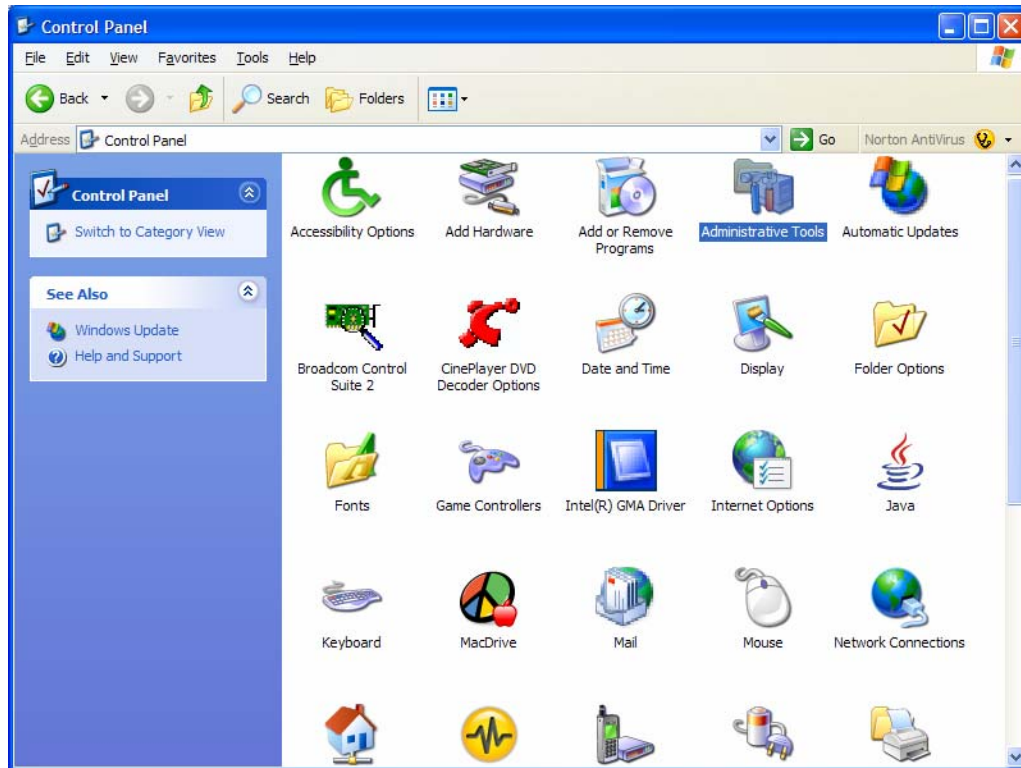


3. If the icon “My Computer” does not show on your desktop, click on the Start icon on the lower left of your screen. If the Control Panel link **is not** displayed, click on the Settings link and then click on the Control Panel link.
4. Click on the Start icon on the lower left of your screen. Click on Run. Delete anything listed in the Open window. Type the following: compmgmt.msc and then click OK. Skip to INSTRUCTION # 4 (Instructions for Partitioning and Formatting from FAT 32 to NTFS {page 24}).

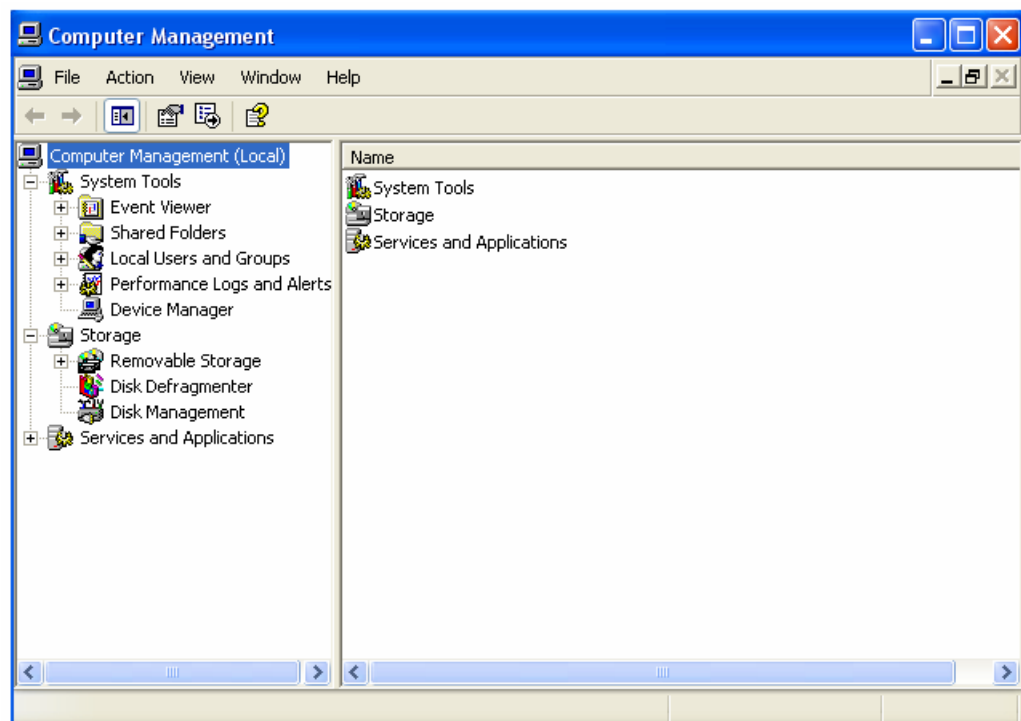


INSTRUCTIONS UPON REACHING CONTROL PANEL

- a. After reaching the Control Panel, click on Administrative Tools.



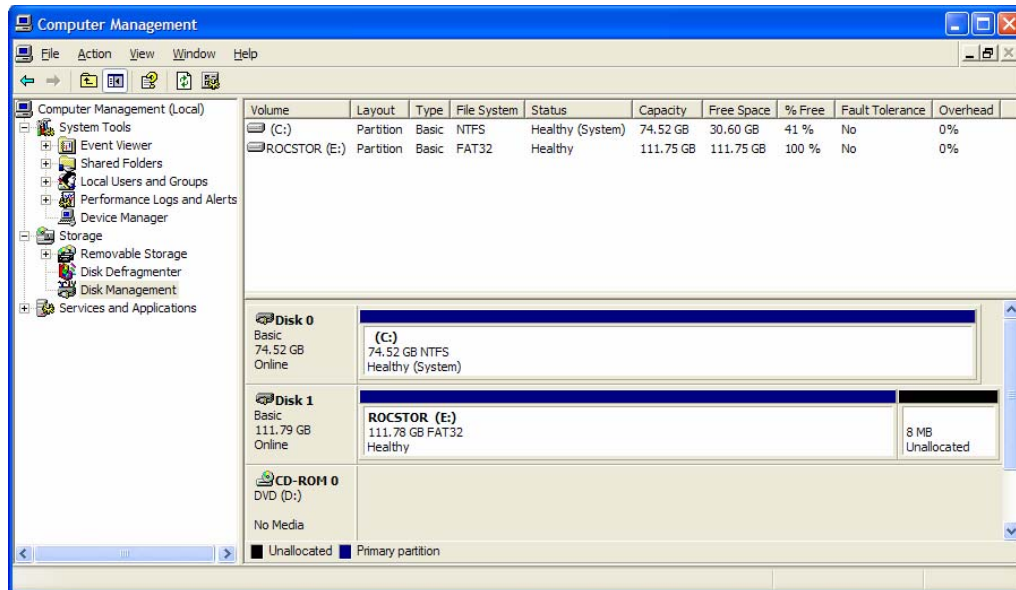
- b. After reaching Administrative Tools, click on Computer Management.
- c. After reaching Computer Management, click on Disk Management.



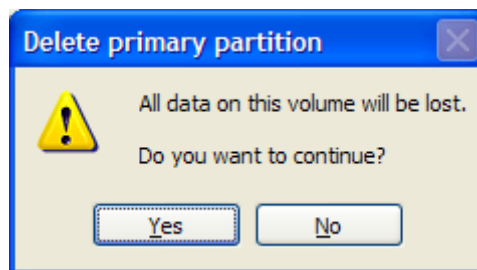
INSTRUCTIONS FOR PARTITIONING AND FORMATING FROM FAT32 to NTFS

1. In the “Disk Management” window, right click the Rocstor drive in the upper portion of the menu to highlight it. In the drop down menu, select “Delete Partition.”

WARNING: Formatting and Partitioning the Rocpro Drive will destroy all of its data. To protect your data, back it up before formatting or partitioning this device.

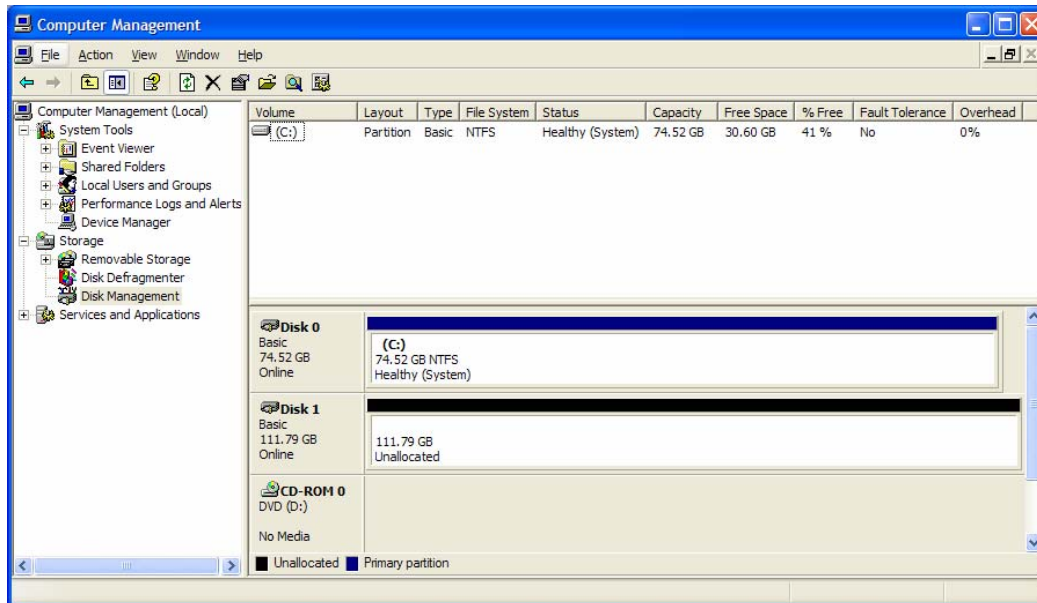


2. The next window is “Delete primary partition.” Click on Yes.

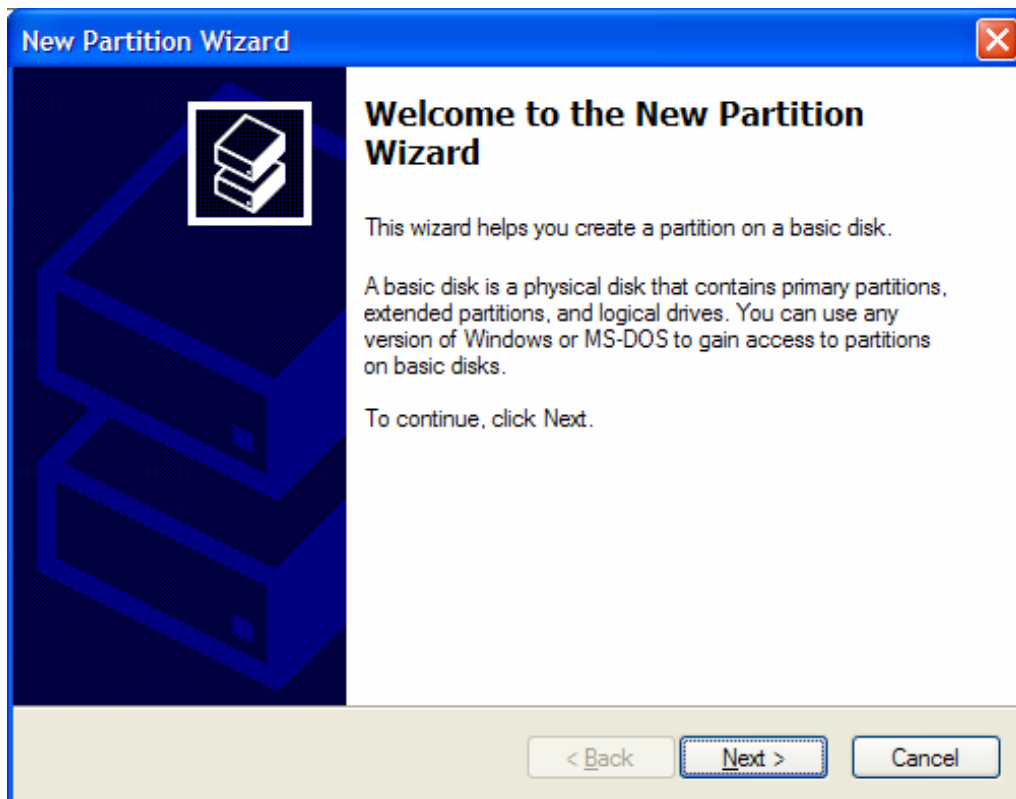


3. At this point the Rocstor drive will not show up on the “Disk Management Volume” window in the upper menu.

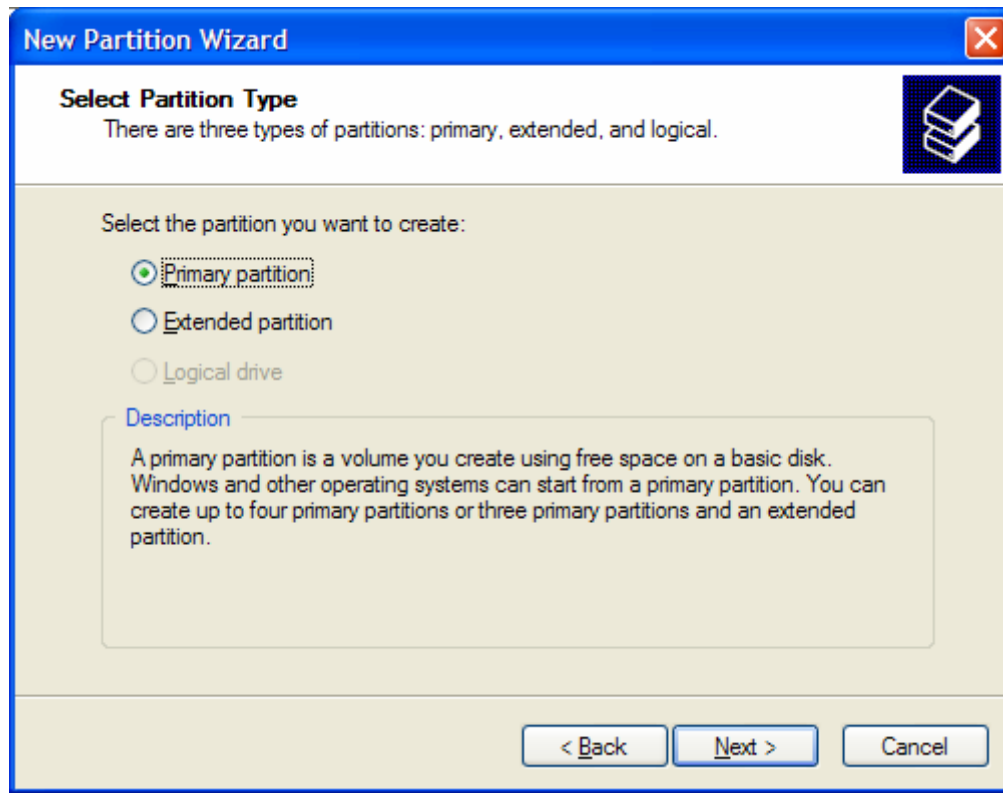
4. The Rocstor drive will show up in the lower menu as an “Unallocated” disk.



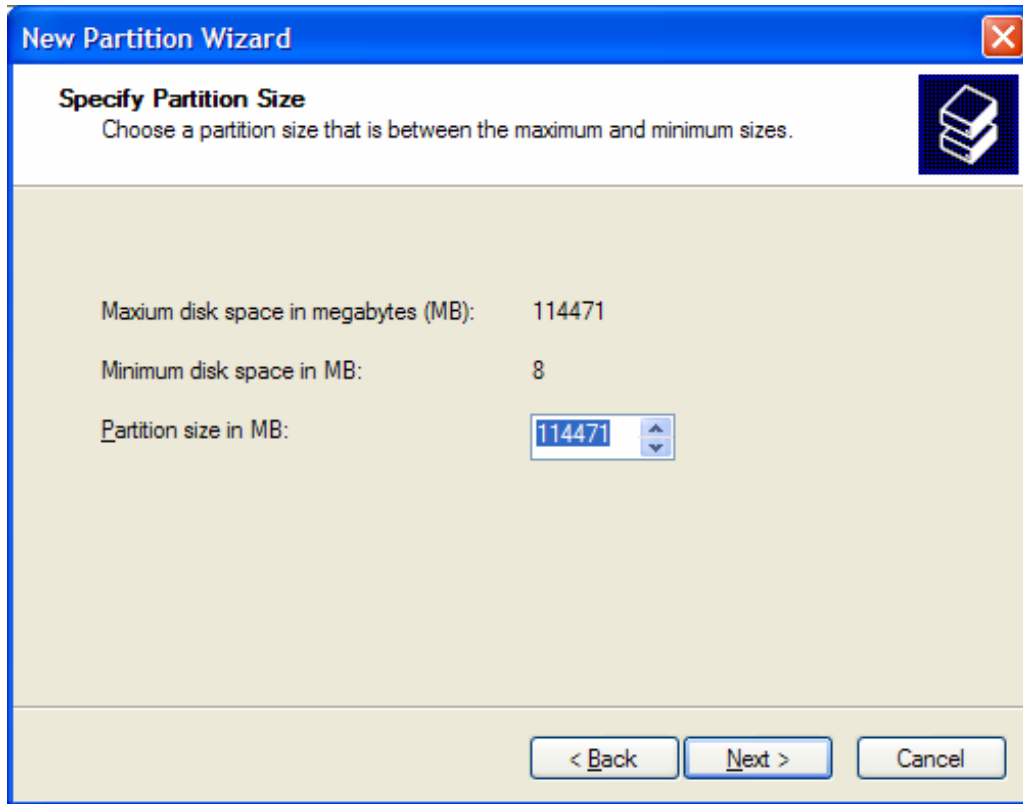
5. Right click anywhere in the “Unallocated” disk area in the lower menu.
6. Click on “New Partition.”
7. You are taken to “Welcome to the New Partition Wizard.” Click Next.



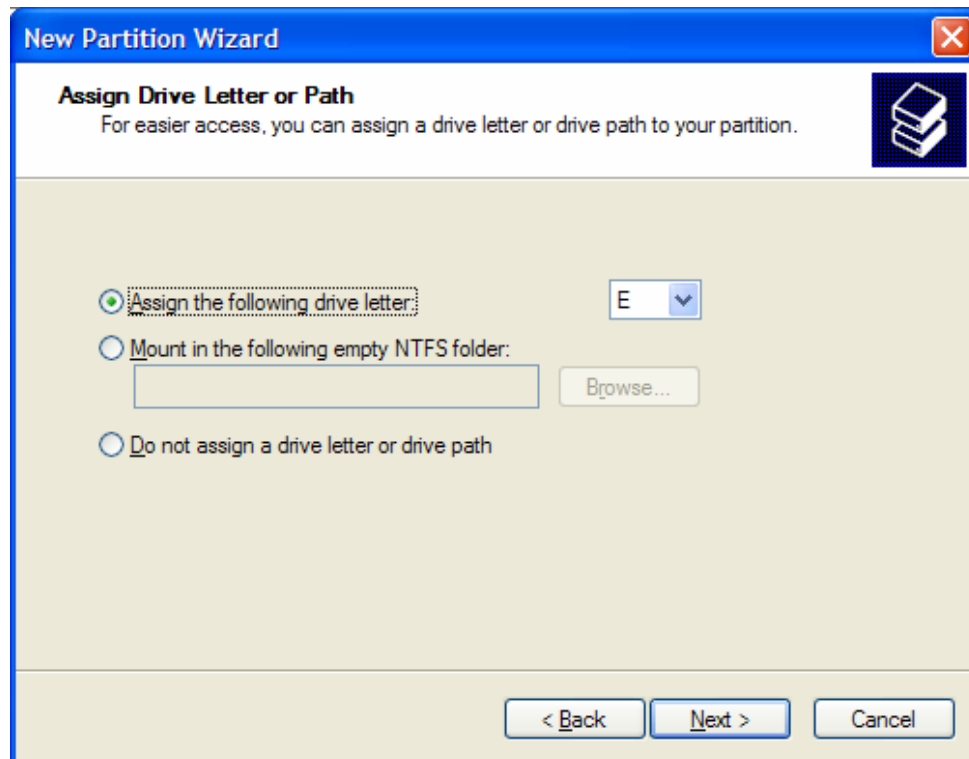
8. Click on "Primary partition" (it should be selected as the default partition). Click Next.



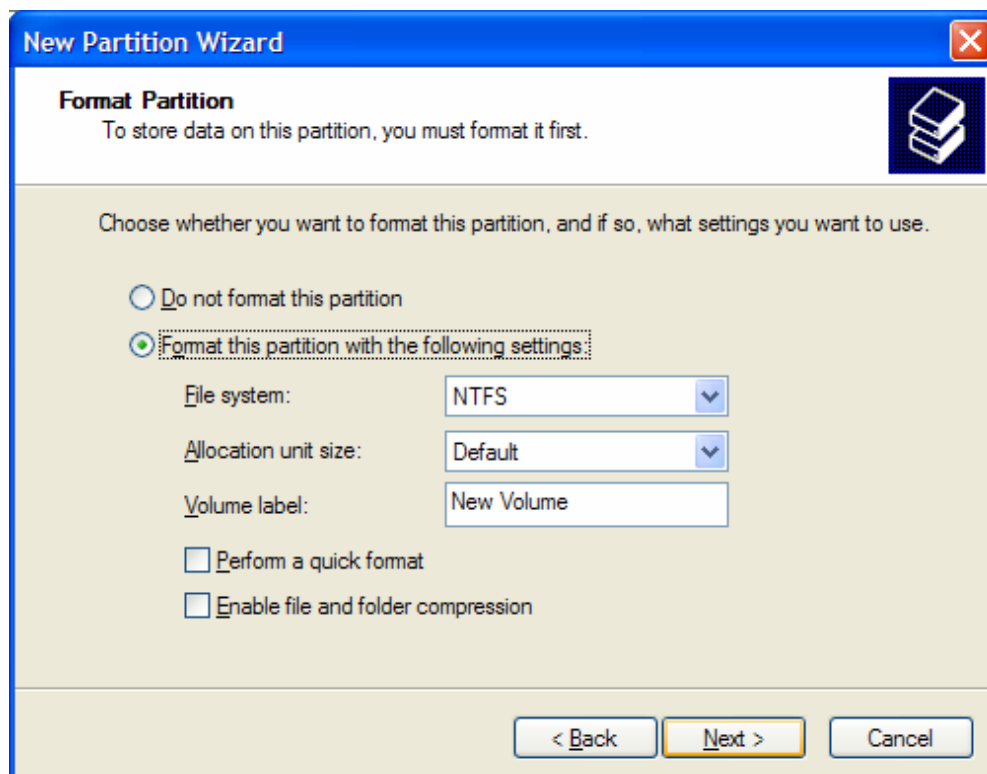
9. Under “Specific Partition Size,” click Next to accept the default setting, which is the maximum size allowed.



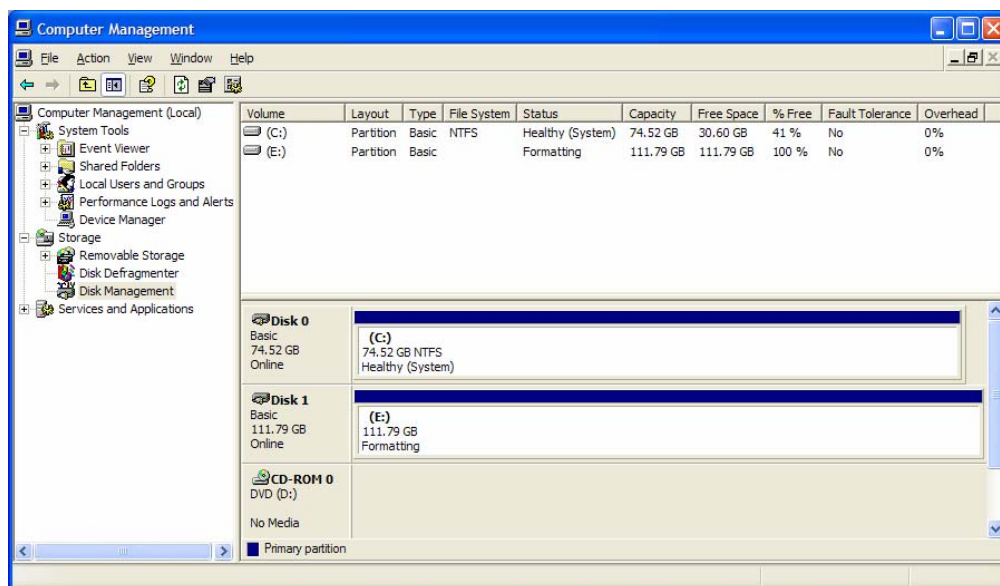
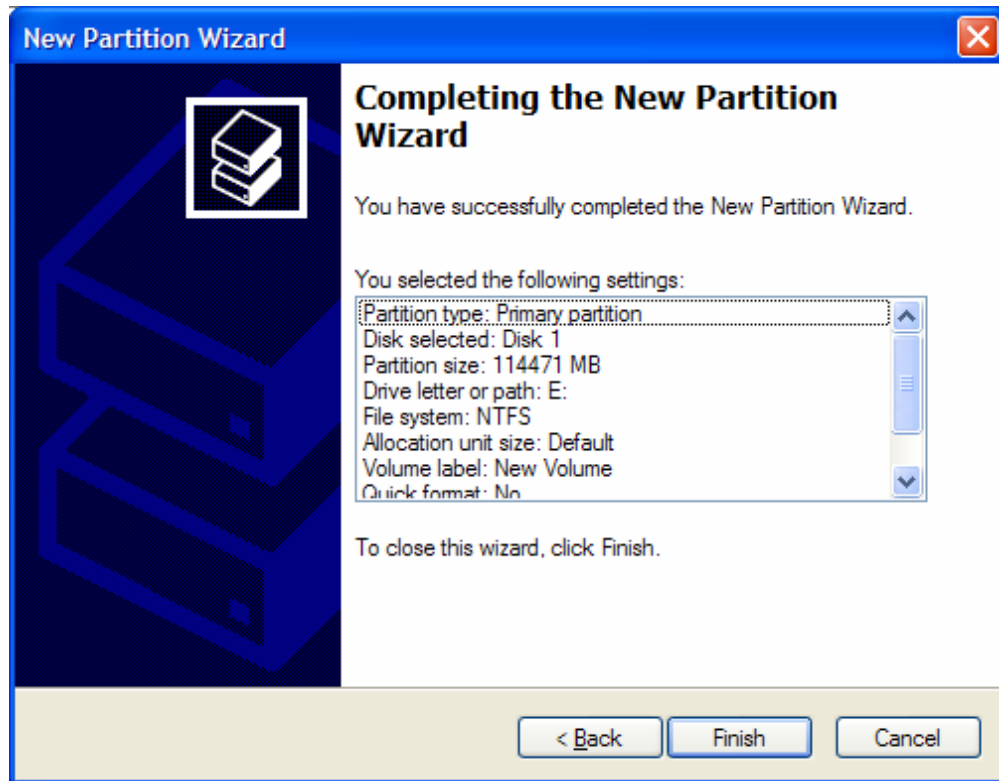
10. Under “Assign Drive Letter or Path,” accept the default letter and click “Next”.



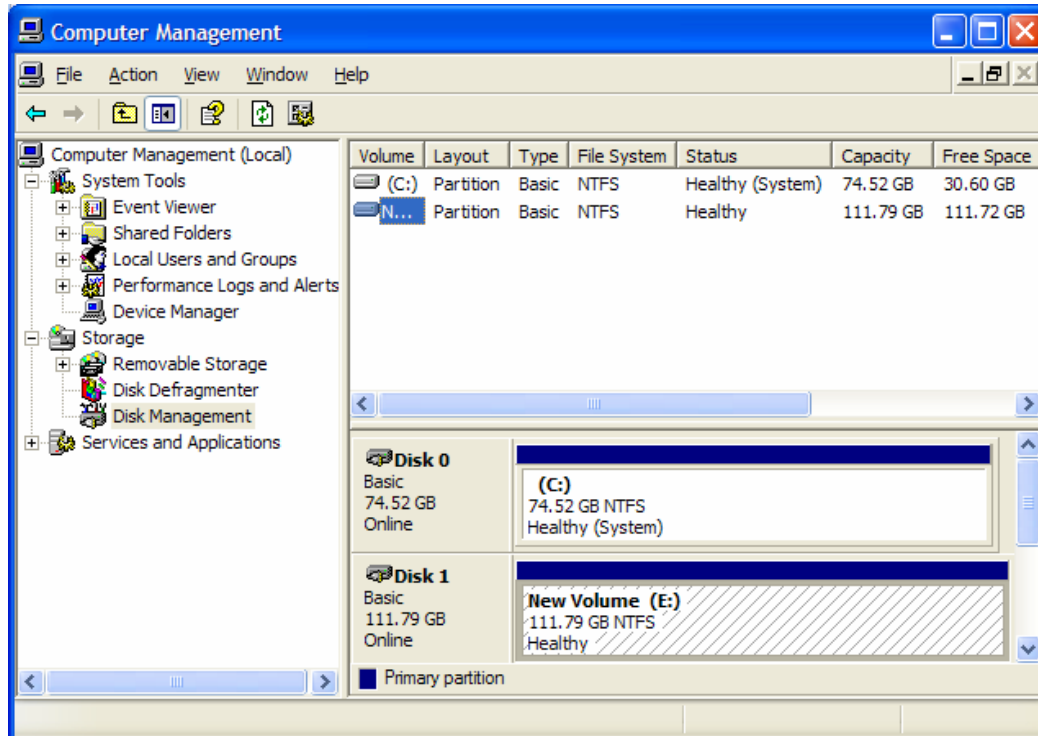
11. In the “Format Partition,” accept the default setting.



12. The “Volume label” can be changed to any name up to 11 characters.
13. Suggest that “Quick Format” be selected and then click “Next”.
14. You now reached the “Completing the New Partition Wizard” screen. It displays the various settings you previously selected. If you are satisfied with your selections, click Finish to complete the new formatting. At this time the Rocstor disk drive is being formatted, which may take a few minutes.



15. You will return automatically to the “Disk Management” window and will see the newly formatted Rocstor disk on the screen with the name you selected. If no new name was entered in the “Volume label,” the Rocstor drive will show up as “New Volume.” To rename the Volume at this time, right click “New Volume” and click “Properties.” You can now change the volume name up to 11 characters. Click OK.



16. You can also change the name at any time in the future by reaching the “Properties” menu of the Rocstor drive.
17. Exit

Troubleshooting

Rocstor data storage products are subjected to several quality control tests before leaving our factory. However, from time to time, the product may not work after shipment or would experience intermittent problems under certain criteria and/or situations. Should you experience a problem with your Rocpro HD, please review the Manual and read the possible solutions that fit your problem. (The User Manual is updated regularly so check the Rocstor website for an updated Manual). Please contact Rocstor technical support listed under contact information at the end of this Manual.

Troubleshooting for MACINTOSH computers

Problem: The computer does not recognize the drive

Solutions:

- Is the Rocpro green light ON and is the cable connected from the HD device to the computer. Rocpro HD icon should appear on the desktop. Continue to review this guide to find the solution.
- Your computer's Minimum requirements may not meet the minimum system requirements as indicated in this Manual. Page 7
- Confirm that the outlet is providing the correct voltage and the electrical power cord is securely attached to both the outlet and the Rocpro drive. Poor or loose connections can result in loss of power and possible damage to the drive. Ensure that the ON/OFF switch is turned to the ON position.
- If the Rocpro drive is connected to an outlet via an Undisrupted Power Supply (battery Backup) or a surge protector, be sure that they provide the correct voltage and they are all switched "ON" and receiving electricity. Period at end of sentence.
- Please review this Manual's installation procedure for the operating system and interface you are using.
- Read the Manual's installation procedure to ensure it was properly followed.
- Please check the cable connections as the cables must be properly and securely attached to the computer and hard drive. Ensure that there is a firm connection. It is suggested that the cables be detached and reattached, and that the computer be shut off for 20 seconds and then restarted.
- Ensure that the Rocpro drive has been properly reformatted by reviewing the User Manual.
- Have you checked to confirm that the computer's operating system works with the file system?

- Review the manual that came with your computer to ensure that the file system is compatible with the operating system.

Problem: The Rocpro drive is not working fast enough.

Solution:

- You may have too many devices connected to your computer (such as Laptop computers.) Disconnect some devices and observe if there is an improvement in performance.

Problem: There is no increase in performance when the Rocpro drive is connected via the USB cable to a USB 2.0 port.

Solution:

- Ensure that the USB 2.0 drivers for the host bus and device have been properly and securely installed. You may reinstall to assure proper installation.

Notes:

- When connecting the device to USB 2.0 port in your computer please be sure that the connection at the host computer is High Speed USB 2.0 and drivers (if required) are installed; otherwise you may experience slower transfer speed between the host computer and the Rocpro device.

Notes - Mac OS 10x:

- Rocpro drives are designed to save electricity and subsequently the wear and tear of the internal hard drive by having the hard drive stop spinning when the Rocpro is not accessed for a certain amount of time (sleeping mode). Under Mac OS 10 you it might cause an error please ignore the error message as it might take few seconds to start spinning at the designated speed (wake up.)
- You must avoid particular characters similar to ^!?\< when coping to FAT 32 volume section.

Troubleshooting for PC WINDOWS based computers

Problem: The computer does not appear to recognize the drive.

Solutions:

- A window should appear, notifying you that a device is connected and/or the Rocpro HD icon should appear on the “My Computer” folder.
- Your computer’s Minimum requirements may not meet the minimum system requirements as indicated in this Manual? Page 7
- Confirm that the outlet is providing the correct voltage and the electrical power cord is securely attached to both the outlet and the Rocpro drive. Poor or loose connections can result in loss of power and possible damage to the drive. Ensure that the ON/OFF switch is turned to the ON position.
- If the Rocpro drive is connected to an outlet via an Undisrupted Power Supply (battery Backup) or a surge protector, be sure that they provide the correct voltage and they are all switched “ON” and receiving electricity. Period at end of sentence.
- Please review the Manual’s installation procedure in reference to Formatting, Operating Systems and Interfaces you are using to ensure they were properly followed.
- Please check the cable connections as the cables must be properly and securely attached to the computer and hard drive. Ensure that there is a firm connection. It is suggested that the cables be detached and reattached, and that the computer be shut off for 20 seconds and then restarted.
- If a conflict with drivers or extensions exists, contact Rocstor for assistance; email tech support at support@rocstor.com or call technical support department at 888.877.7716.

Problem: The Rocpro drive is not working fast enough

Solution:

- You may have too many devices connected to your computer (in particular in case of Laptops.) Disconnect some devices and observe if there is an improvement in performance.

Problem: The performance and/or transfer speeds are slow when the Rocpro drive is connected to my USB port.

Solution:

- USB ports come in different speeds from 12Mbps/ s to 480Mbps/s. USB 2.0 is a High-Speed connection. If the Rocpro HD is connected to a USB 1.1 port (low speed) or hub, the drive will work slower than if connected to a USB 2.0 port or hub.

Problem: There is no increase in performance when the Rocpro drive is connected via the USB cable to a USB 2.0 port.

Solution:

- Ensure that the USB 2.0 drivers for the host bus and device have been properly and securely installed. You may reinstall to assure proper installation.

Problem: The drive is working slow when connected directly to a USB 2.0 port on your computer?

Solution:

- Review the minimum system requirements for your computer to ensure it supports High Speed USB 2.0.

General Notes:

- When connecting the device to USB 2.0 port in your computer please be sure that the connection at the host computer is High Speed USB 2.0 and drivers (if required) are installed otherwise you may experience slower transfer speed between the host computer and the Rocpro device.

Front Lights:

Problem: The front light does not come ON.

Solutions:

- The Rocpro device may not be connected to electricity.
- The device switch is in the OFF position.
- The Built-in Power Supply does not work. Contact Rocstor technical support.

Situation: The light is green but it also flickers in Red. Answer: you have light capitalized in the problem above.

Solutions:

- The light is OFF when the drive is Reading/Writing; do not turn the device OFF in this situation as you may lose the data being transferred in R/W.
- The light remains Green at normal operation or idle operation.

KNOWLEDGE BASE

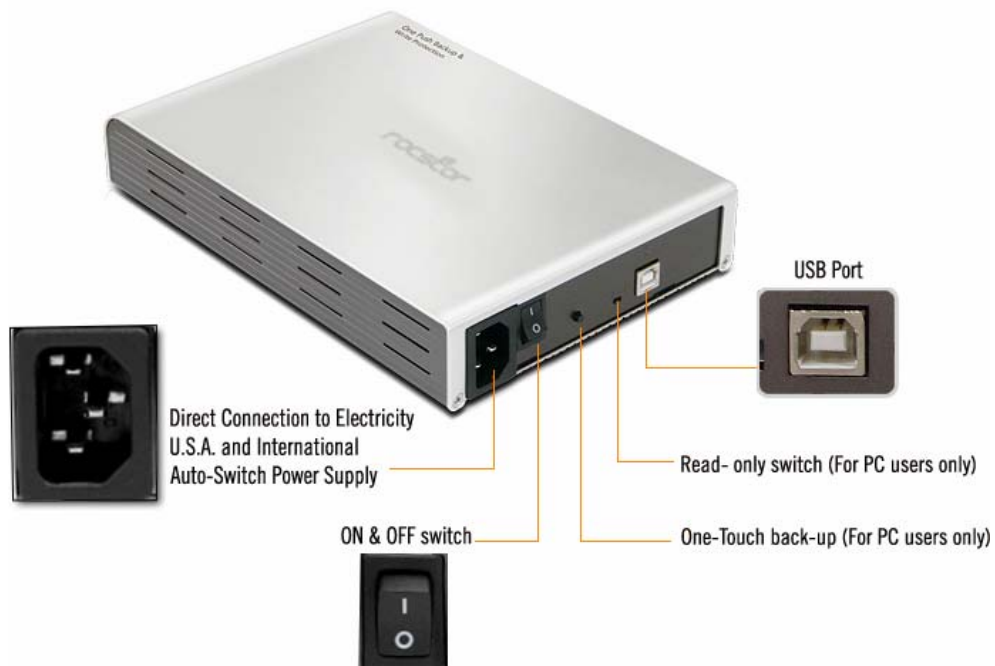
Rocpro 225 Unique Features

- Built-in power supply (No bulky AC adapter necessary.)
 Direct Connection to Electricity.
 U.S.A. and International Auto-Switch Power Supply.
- Free carrying case.
- The Advanced Aluminum Material enclosure performs as a heat sink around the hard drive.
 The state of the art casing is designed and engineered to maximize heat dissipation.
- The Fan-less enclosure significantly reduces noise and vibration.
- The case should be in an open environment to permit air to flow around the drive. It is normal for the case to become warm when it is being used.
- The Rocpro series is designed for stackable, horizontal and vertical use.
- Includes all necessary cables and software
- Easy plug-and-play installation (pre-formatted Hard Drive)
- Cross-platform compatibility
- Designed for horizontal or vertical use
- Small footprint
- 2 year limited warranty
- 2 year unlimited toll-free telephone tech support



Specifications

- **Dimensions:** 5.8 x 8.7 x 1.6 inches
14.7 x 22.0 x 4.1 cm
- **Weight:** 2.9 pounds (1.3 kilograms)
- **Transfer rates:** USB 2.0 up to 480 Mbits/s and USB 1.1 up to 12 Mbits/s.

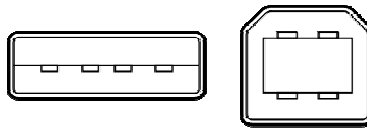


Introductions: Interface (port) and Cables

Universal Serial Bus (USB) is a serial bus standard to interface devices. USB was designed to allow peripherals to be connected using a single standardized interface socket and to improve Plug-and-play capabilities by allowing devices to be connected and disconnected without rebooting the computer (hot-swapping.) Other convenient features include providing power to low-consumption devices without the need for an external power supply and allowing many devices to be used without requiring manufacturer specific, individual device drivers to be installed. I would pull the letter “a” and the word “without” to the left side of the USB diagram.



USB can connect computer peripherals such as external hard drives storage devices, keyboards, PDAs, scanners, digital cameras, printers, personal media players, and flash drives. For many of those devices USB has become the standard connection method.



USB supports three data transfer rates:

- USB 2.0: A Hi-Speed rate of 480 Mbits/s (60 MB/s). All Rocstor devices are integrated with USB 2.0, *Hi-Speed*.
- USB 1.1: A **Full Speed** rate of 12 Mbits/s (1.5 MB/s). All USB Hubs support Full Speed.
- USB 1.0: A **Low Speed** rate of 1.5 Mbits/s (187 KB/s)

Compassion Chart:

	Raw Bandwidth	Transfer Speed		Power Provided	Device per channel
	(Mbits/s)	(Mbits/s)	Max. Cable Length Feet (meters)		
SAS	3000	375	26 Ft (8 m)	No	4
eSATA	3000	375	6.5 Ft (2 m)	No	1 (15 W/ port multiplier)
SATA 300	3000	375	3.3 Ft (1 m)	No	1 per line
SATA 150	1500	187.5	3.3 Ft (1 m)	No	1 per line
PATA (133)	1064	133	18 inches (0.46 meters)	No	2
FireWire 3200	3144	393	100; (Cables available for 100m+)	12–25 V, 15 W	63
FireWire 800	786	98.25	100 [11] m	12–25 V, 15 W	63
FireWire 400	393	49.13	15 Ft (4.5 m)	12–25 V, 15 W	63
USB 2.0	480	60	5 [14] m	5 V, 2.5 W	127
USB 3.0	4800	600	TBD	5 V, 2.5 W	127
Ultra -320 SCSI	2560	320	39 Ft (12 m)	No	16
Fiber Channel Over Copper Cable	4000	400	39 Ft (12 m)	No	16777216 with switches
Fiber Channel Over Fiber	10520	2000	6.5- 164000 Ft (2–50000 m)	No	16777216 with switches
Infiniband 12x quad-rate	120000	12000	> 32 Ft (>10 m) Copper <32,800 Ft (<10000 m) Fiber	No	1 with point to point Many W/switched Fabric

Introductions: Formatting

File Allocation Table (FAT)

FAT is a file system developed by Microsoft for MS-DOS and is the primary file system for consumer versions of Microsoft Windows.

The FAT file system is relatively uncomplicated and is supported by virtually all existing operating systems for personal computers. This makes it an ideal format for hard drives and other storage devices and a convenient way of sharing data between disparate operating systems installed on the same computer (a dual boot environment).

FAT 32 is a disk formatting scheme which allows a maximum file size of 4 GB. Larger files require another formatting type such as HFS+ or NTFS.

Microsoft's Scan-Disk utility, included with Windows 95/98, places a volume limit of 127.53 gigabytes.

FAT 32 was introduced with Windows 95 OSR2. Windows 98 introduced a utility to convert existing hard disks from FAT16 to FAT32 without loss of data. In the NT line, native support for FAT32 arrived in Windows 2000.

Windows 2000 and Windows XP can read and write to FAT32 file systems of any size, but the format program included in Windows 2000 and higher can only create FAT32 file systems of 32 GB or less. This limitation is by design and was imposed because many tasks on very large FAT32 files become slow and inefficient when file systems exceed 32GB. This limitation can be bypassed when using the Windows command line Format utility or by using third-party formatting utilities.

The maximum possible size for a file on a FAT32 volume is 4 GB minus 1 byte. Video capture and editing applications and some other software can easily exceed this limit.

Until mid-2006, those who run dual boot systems or who move external data drives between computers with different operating systems had little choice but to stick with FAT32. Since then, full support for NTFS has become available in Linux and many other operating systems, by installing the FUSE library (on Linux) together with the NTFS-3G application. Data exchange is also possible between Windows and Linux by using the Linux-native ext2 or ext3 file systems through the use of external drivers for Windows, such as ext2 IFS. However, Windows cannot boot from ext2 or ext3 partitions.

HFS Plus or HFS+

This is a file system developed by Apple Inc. to replace their Hierarchical File System (HFS) as the primary file system used in Macintosh computers (or other systems running Mac OS). It is also one of the formats used by the iPod digital music player. HFS Plus is also referred to as **Mac OS Extended** (or, erroneously, “HFS Extended”), where its predecessor, HFS is also referred to as *Mac OS Standard* (or, erroneously, as “HFS Standard”). During development, Apple referred to this file system with the codename *Sequoia*.

HFS Plus is an improved version of HFS, supporting much larger files (block addresses are 32-bit length instead of 16-bit) and using Unicode (instead of Mac OS Roman or any of several other character sets) for naming the items (files, folders). Names were normalized to a form very nearly the same as NFD (there are some minor differences derived from the fact that the HFS Plus format was finalized before Unicode had standardized the NFD format). HFS Plus permits filenames up to 255 UTF-16 characters in length, and n-forked files similar to NTFS, though almost no software takes advantage of forks other than the data fork and resource fork. HFS Plus also uses a full 32-bit allocation mapping table, rather than HFS’s 16 bits. This was a serious limitation of HFS, meaning that no disk could support more than 65,536 allocation blocks under HFS. When disks were small, this was of little consequence, but as larger-capacity drives became available, it meant that the smallest amount of space that any file could occupy (a single allocation block) became excessively large, wasting significant amounts of space. For example, on a 1 GB disk, the allocation block size under HFS is 16 KB, so even a 1 byte file would take up 16 KB of disk space.

HFS Plus volumes are divided into sectors (called logical blocks in HFS), that are usually 512 bytes in size. These sectors are then grouped together into allocation blocks which can contain one or more sectors. The number of allocation blocks depends on the total size of the volume. HFS Plus uses a larger value to address allocation blocks than HFS, 32 bits rather than 16 bits. This means it can access 4,294,967,296 ($=2^{32}$) allocation blocks rather than the 65,536 ($=2^{16}$) allocation blocks available to HFS.

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This Limited Warranty applies to the Rocstor branded hardware products sold by or leased from Rocstorage, Inc., its worldwide subsidiaries, affiliates, authorized resellers, or country distributors (collectively referred to in this Limited Warranty as “Rocstor”) with this Limited Warranty. This Limited Warranty is applicable in all countries and may be enforced in any country where Rocstor or its authorized service providers offer warranty service subject to the terms and conditions set forth in this Limited Warranty. However, warranty service availability and response times may vary from country to country and may also be subject to registration requirements in the country of purchase.

Rocstor warrants that the Rocstor hardware product and all the internal components of the product that you have purchased or leased from Rocstor are free from defects in materials or workmanship under normal use during the Limited Warranty Period. The Limited Warranty Period starts on the date of purchase or lease from Rocstor. Your dated sales or delivery receipt, showing the date of purchase or lease of the product, is your proof of the purchase or lease date. You may be required to provide proof of purchase or lease as a condition of receiving warranty service. You are entitled to warranty service according to the terms and conditions of this document if a repair to your Rocstor branded hardware is required within the Limited Warranty Period. This Limited Warranty extends only to the original purchaser or lessee of this Rocstor branded product and is not transferable to anyone who obtains ownership of the Rocstor branded product from the original purchaser or lessee.

Rocstor products are manufactured using new materials or new and used materials equivalent to new in performance and reliability. Spare parts may be new or equivalent to new. Spare parts are warranted to be free from defects in material or workmanship for thirty (30) days or for the remainder of the Limited Warranty Period of the Rocstor hardware product in which they are installed, whichever is longer.

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During the Limited Warranty Period, Rocstor will repair or replace the defective component parts or the hardware product. All component parts or hardware products removed under this Limited Warranty become the property of Rocstor. The replacement part or product takes on either the Limited Warranty status of the removed part or product or the thirty (30) day limited warranty of the spare part. In the unlikely event that your Rocstor product has a recurring failure, Rocstor, at its discretion, may elect to provide you with a replacement unit of Rocstor's choosing that is at least equivalent to your Rocstor branded product in hardware performance. Rocstor reserves the right to elect, at its sole discretion, to give you a refund of your purchase price or lease payments (less interest) instead of a replacement. This is your exclusive remedy for defective products. The original Limited Warranty is not extended when the product, or a part of the product, is repaired or replaced during the Limited Warranty period. Rocstor shall not be responsible or liable for backing up any data that is on a drive being returned for service.

YOU SHOULD MAKE PERIODIC BACKUP COPIES OF THE DATA STORED ON YOUR HARD DRIVE OR OTHER STORAGE DEVICES AS A PRECAUTION AGAINST POSSIBLE FAILURES, ALTERATION, OR LOSS OF THE DATA. BEFORE RETURNING ANY UNIT FOR SERVICE, BE SURE TO BACK UP DATA AND REMOVE ANY CONFIDENTIAL, PROPRIETARY, OR PERSONAL INFORMATION. ROCSTOR IS NOT RESPONSIBLE FOR DAMAGE TO OR LOSS OF ANY

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Rocstor does not warrant that the operation of this product will be uninterrupted or error-free. Rocstor is not responsible for damage that occurs as a result of your failure to follow the instructions that came with the Rocstor branded product.

This Limited Warranty does not apply to expendable parts. This Limited Warranty does not extend to any product from which the serial number has been removed or that has been damaged or rendered defective (a) as a result of accident, misuse, abuse, or other external causes; (b) by operation outside the usage parameters stated in the user documentation that shipped with the product and/or posted on the Rocstor website; (c) by the use of parts not manufactured or sold by Rocstor; (d) as a result of normal wear; or (e) by modification or service by anyone other than (i) Rocstor, (ii) a Rocstor authorized service provider, or (iii) your own installation of end-user replaceable Rocstor or Rocstor approved parts if available for your product in the servicing country.

These terms and conditions constitute the complete and exclusive limited warranty agreement between Rocstor and you regarding the Rocstor branded product you have purchased or leased. These terms and conditions supersede any prior agreements or representations including representations made in Rocstor sales literature or advice given to you by Rocstor or an agent or employee of Rocstor-that may have been made in connection with your purchase or lease of the Rocstor branded product. No change to the conditions of this Limited Warranty is valid unless it is made in writing and signed by an authorized representative of Rocstor.

Buyer's Obligation under the Warranty

The person requesting coverage under this warranty shall prove that he or she is the original purchaser and declares that the product has not been sold, leased, bartered or otherwise changed possession. **The purchaser shall frequently backup the Rocpro hard drive and backup the data immediately prior to returning the drive for warranty service.**

The buyer must notify Rocstor and show proof of notification, through any reasonable means of communication. See full street address email address, and toll free phone numbers below or updated contact information are available on Rocstor.com website. The notification shall identify any defect, malfunction, or nonconformity promptly upon discovery. Rocstor will acknowledge receipt of the communication and issue a Return Merchandise Authorization (RMA) code. The buyer is obligated to securely and safely package(s) the product, preferably in the original packing materials, WITH THE RMA number, and deliver it together with a copy of the original purchase receipt and a description of the problem to the Rocstor home office. Buyer is responsible for the product until it is received by Rocstor. It is recommended that the product be insured during transportation by the sender. You must prepay any shipping charges, taxes, or duties associated with transportation of the product. In addition, you are responsible for insuring any product shipped or returned for service. You assume risk of loss during shipping.

Limitation of damages (Liability)

IF YOUR ROCSTOR BRANDED HARDWARE PRODUCT FAILS TO WORK AS WARRANTED ABOVE, THE ORIGINAL PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE REPAIR OR REPLACEMENT. ROCSTOR'S MAXIMUM LIABILITY UNDER THIS LIMITED WARRANTY IS EXPRESSLY LIMITED TO THE LESSER OF THE PRICE YOU HAVE PAID FOR THE PRODUCT OR THE COST OF REPAIR OR REPLACEMENT OF ANY ROCSTOR HARDWARE COMPONENTS THAT MALFUNCTION IN CONDITIONS OF NORMAL USE. ROCSTOR IS NOT LIABLE FOR ANY DAMAGE TO ANY OTHER PRODUCT CONNECTED TO A ROCSTOR PRODUCT.

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We accept no liability for any loss of data, damages and the inability of Rocstor products to work with any third party equipment. Nor can Rocstor accept any liability or responsibility for software or third party hardware products.

Limited Warranty Period

The limited warranty period for Rocpro 850 is two (2) Years Parts and Labor. This Limited Warranty extends only to the original purchaser or lessee of this Rocstor branded product and is not transferable to anyone who obtains ownership of the Rocstor branded product from the original purchaser or lessee.

Types of Limited Warranty Service

Your Rocstor Limited Warranty consists of repair or replacement of defective parts, including hard drives identified by Rocstor Support Organization as “pre-failure.”

Carry-in Limited Warranty Service Available Monday - Friday

Under the terms of carry-in service, you may be required to deliver your Rocstor product to the Rocstor Service Center or an authorized service location for warranty repair. You must prepay any shipping charges, taxes or duties associated with transportation of the product. In addition, you are responsible for insuring any product shipped or returned for service. You assume risk of loss during shipping.

YOU SHOULD MAKE PERIODIC BACKUP COPIES OF THE DATA STORED ON YOUR HARD DRIVE OR OTHER STORAGE DEVICES AS A PRECAUTION AGAINST POSSIBLE FAILURES, ALTERATION OR LOSS OF THE DATA. BEFORE RETURNING ANY UNIT FOR SERVICE, BE SURE TO BACK UP DATA AND REMOVE ANY CONFIDENTIAL, PROPRIETARY OR PERSONAL INFORMATION. ROCSTORAGE IS NOT RESPONSIBLE FOR DAMAGE TO OR LOSS OF ANY PROGRAMS, DATA OR REMOVABLE STORAGE MEDIA. ROCSTORAGE IS NOT RESPONSIBLE FOR THE RESTORATION OR REINSTALLATION OF ANY PROGRAMS OR DATA OTHER THAN SOFTWARE INSTALLED BY ROCSTORAGE WHEN THE PRODUCT WAS MANUFACTURED.

Rocstorage shall not be responsible or liable for backing up any data that is on a drive being returned for service. Expect that all data on the drive will be destroyed and not retrievable when returned for warranty service.

Rocstor Replaceable Parts Program

Where available, the Rocstor Replaceable Parts program ships approved replacement parts directly to you to fulfill your warranty. This will save considerable repair time. After you call the Rocstor Technical Support Center at **888.877.8777** a replaceable part can be sent directly to you. Once the part arrives, call the Rocstor Technical Support Center. A technician will assist you over the phone to ensure that the installation is quick and easy.

Service Upgrades

Rocstor offers extra coverage for your product. For information on service upgrades, visit www.rocstor.com. Service upgrades purchased in one country are not transferable to another country.

Capacity Disclaimer

Actual accessible hard drive capacity will indicate up to 10% lower than stated under different Operating Systems and formatting.

The storage volume is measured in total bytes before formatting. References to round numbers of gigabytes or terabytes are an approximation only. For example, a disk drive labeled as having 500GB (Gigabytes) has space for approximately 500,000,000 bytes before formatting. After formatting, the drive capacity is reduced by about 5% to 10% depending on the operating system and formatting used or "1GB = 1,000,000,000 bytes.

Options and Software

The Limited Warranty terms and conditions for Rocstor options are as indicated in the Limited Warranty applicable to Rocstor options. ROCSTOR DOES NOT WARRANTY SOFTWARE PRODUCTS, INCLUDING ANY SOFTWARE PRODUCTS OR THE OPERATING SYSTEM PREINSTALLED BY ROCSTOR. Rocstor's only obligations with respect to software distributed by Rocstor under the Rocstor brand name are set forth in the applicable end-user license or program license agreement. Non-Rocstor hardware and software products are provided "AS IS" and without any Warranty. However, non-Rocstor manufacturers, suppliers or publishers may provide their own warranties directly to you.

The data stored in Rocstor and Rocsecure storage product lines are not guaranteed by Rocstor (or the hard disk manufacturer.) We are not responsible for any loss of data. Always back up data regularly

TECHNICAL SUPPORT

Software Technical Support

Software technical support is defined as assistance with questions and issues about the software that was either preinstalled by Rocstor on the Rocstor branded product or that was included with the Rocstor branded product at the time of your purchase or lease of the product. Technical support for software is available for the first ninety (90) days from date of product purchase or lease. Your dated sales or delivery receipt, showing the date of purchase or lease of the product, is your proof of the purchase or lease date. You may be required to provide proof of purchase or lease as a condition of receiving software technical support. After the first ninety (90) days, technical support for software that was either preinstalled by Rocstor on the Rocstor branded product or included with the Rocstor branded product at the time of your purchase or lease of the product is available for a fee.

WARNING: The individual user should take care to determine prior to use whether this device is suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, the manufacturer "Rocstor" makes no representation or warranty as to the suitability or fitness of these devices for any specific application.

Technical Support

All Rocstor hard drives are backed by free telephone technical support for two (2) years from the date of purchase. Please register your product with Rocstor. To register, fill in the Limited Warranty Registration form in the Support tab at www.rocstor.com.

Free telephone technical support is available weekdays from 9 AM until 6 PM Pacific Standard Time. Customers in the United States and Canada can call toll-free: **(888) 877-8777**; all others must call **(818) 449-2000**.

When calling for support, please have the product's serial number (printed on the label on the bottom of the drive) and system hardware information available.

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Rocstor wishes to acknowledge the use of tables, charts, graphs and texts from the Wikipedia website.

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Assembled/designed/integrated in U.S.A. using domestic and / or foreign components.

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Tel: (888) 877-7716
Fax: (818) 884-8777

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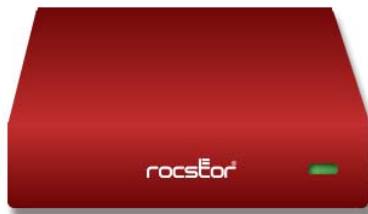
Our Corporate Sales Team's goal is to help our U.S.A. and Canadian customers find a storage solution that best serves their needs. We will help you determine your best purchasing options. For more information please contact the appropriate department below or call us at +1 (888) 877-7716

General sales information: sales@Rocstor.com
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Email: reseller_info@Rocstor.com



Available in Silver, Red and Black

Thank you for purchasing Rocpro 225.

Rocstor

Ver.07 01G