



DATA-CASTLE
RAIDECKER BT-3058
User Manual

Digital products is present all over the market for a while already. As a storage like digital music files; photographs; home movies; home video and extend to business records keeping on personal computer just reach new height again and again. Because of consumers want more of it . The explosion of all of this digital information is rapidly consuming available hard disk drive(HDD) space and creating a critical storage challenge.

BT-3058 RAIDECKER meets the needs of consumers who want to create, share and ensure their digital information at hand. The most compact external enclosure with mighty functionality including RAID 1 / RAID 0 / BIG / JBOD. It just surpass in HDD external case far away.

Such a cost-effective and ready-to-use storage appliance providing enhanced data protection, high-performance storage, and plug and play functionality. It is just a easy way to operation storage appliance for protect your data.





● **BT-3058 RAID external enclosure.**



● **2 meters eSATA cable.**



● **Power adapter.**



● **M3*4 flat head screws**



● **BT-3064 eSATA to USB adapter
(Optional)**



● **Hi-speed USB 2.0 cable.**



● **2+2 PCI-X Card (Non-RAID)
(Optional)**



● **1+1 PCI-E Card
(Optional)**



● **PCMCIA Card for eSATA
(Optional)**

Note:

If your host without an eSATA port, and you intend to connect with eSATA cable, an eSATA PCI-E card or PCI-X card (for Desk Top) or PCMCIA card (for . Notebook) is necessary.

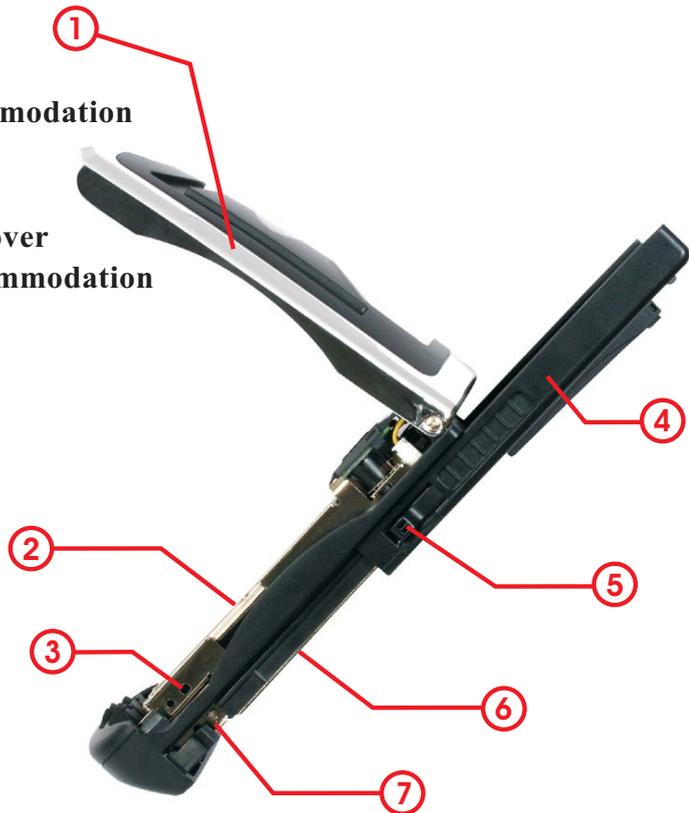
Front View

- 1.power: green for power on status.
- 2.fan err: red for fan error status.
- 3.JBOD : green for JBOD policy working status.
- 4.BIG: green for BIG policy working status.
- 5.RAID0: green for RAID 0 policy working status.
- 6.RAID1: green for RAID 1 policy working status.
- 7.HOST: on top of "HOST" green for contacting with host status ; below "HOST" flash blue for data transferring status.
- 8.HDD1: upper deck disk location; on top of "HDD1" green for contacting with disk status; below "HDD1" flash blue for data transferring status.
- 9.HDD2: bottom deck disk location; on top of "HDD2" green for contacting with disk status; below "HDD2" flash blue for data transferring status.
- 10.push button for release top cover.



Side View

- 1.Top cover
- 2.upper deck for 2.5" H.D.D accommodation
- 3.M3 screw for fix H.D.D
- 4.Bottom cover
- 5.Push button for release bottom cover
- 6.Bottom deck for 2.5" H.D.D accommodation
- 7.M3 screw for fix H.D.D



Rear View

- 1.Power on/off switch
- 2.Power adapter slot
- 3.eSATA slot
- 4.Fan ventilator
- 5.Rubber foots
- 6.Stand off



The disk drive industry is undergoing a significant technology transition, with Serial ATA replacing the parallel ATA interface that has served the last decade of PCs. Parallel interfaces, such as the older ATA disk interface, have difficulty in scaling to higher speeds needed in today's systems.

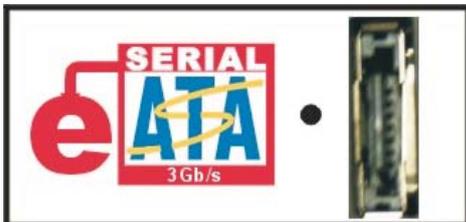
Serial interfaces not only offer higher data rates, but also smaller cables and connectors, and lower voltage signals for internal storage. In addition, They provide an interface technology that can scale to accommodate system needs for increasing storage capacity and performance over the next decade. Additionally, the Serial ATA interface is well suited for external application and provides a number of advantages over the USB and 1394 interfaces used today. According to John Monroe, Research Vice President, Gartner, "By the end of 2005, SATA will become the dominant standard HDD interface, and by the end of 2007, SATA should achieve 100 percent penetration in all desktop and notebook HDD markets." The BT-3058 adopt eSATA is just to the trend.

As most of the external drives are typically connected with a USB interface to most PCs. The BT-3064 is a help to transform eSATA interface to USB for compliant with existing USB interface.

eSATA Cables and Connectors

The cables and connectors used to attach Serial ATA Drives to your computer are as follows:

External Serial ATA Port



External Serial ATA Connector



eSATA to USB Adapter

As most of the external drives are typically connected with a USB interface to the host. The BT-3064 is a help to transform eSATA interface to USB for compliant with existing USB interface for data transfer purpose.



Serial ATA Port



Hi-speed USB port



Step 1: a. FULL FILL 2.5" HARD DISK

Upper deck-

Open up cover by press the button.



b. Slip 2.5" hard disk into first deck and connection with SATA connector



c. Tighten the M3 screws at both sides



d. Close the top cover.

Step2: Below deck-

- a. Release below deck by press the button at both sides and slip it forward to rear side.**



- b. Slip 2.5" hard disk into deck and connection with SATA connector**



- c. Tighten the M3 screws at both sides.**



- d. Slip in the bottom cover until a “click” sound appear**



Step 3: Connection

- a . Connect the power adapter.**
- b . Connect one end of the eSATA cable to the RAIDECKER and the other end to your host computer.**

Note: Make sure your computer (Host) with an eSATA port. Most of computers do not provide with eSATA port now, If not, An eSATA PCI-X or PCI-E or PCMCIA card is necessary. Or an eSATA to USB adapter is needed as well.

Note: The eSATA to USB adapter capable for work with RAIDECKER to connect with host.

The BT-3058 default configuration is in JBOD mode. To change the storage policy configuration mode, please refer to next page.

Storage Mode: There are four kinds of different mode as BT-3058 adapted. You can use the jumpers to select the mode which you like.

JBOD

This storage policy grants the host computer direct access to a physical disk drive. With JBOD (just a bunch of disks), the number of available virtual drives is equal to the number of physical drives. JBOD is also called the bypass mode because the host bypasses the virtualization engine to access the drive directly.

SAFE

This storage policy makes all data stored in duplicate on separate hard disk drives to prevent data loss due to drive failure. At least two hard disk drives mirror each other at all times, equivalent to RAID 1. Every write operation goes to both drives. SAFE provides the highest level of data protection, but halves the amount of storage space because all data must be stored twice. To implement the SAFE storage policy, the Basic Configuration Wizard creates two volumes. Each volume consists of two hard disk drives that mirror each other. The remaining hard disk drive is specified as a Hot Spare for both volumes.

BIG

This storage policy makes multiple physical hard disk drives strung together (concatenated) and treated as one large volume. This configuration allows you to increase logical volume size beyond the capacity of individual hard disk drives. BIG provides the maximum amount of storage space, but no additional performance of data redundancy. The Basic Configuration Wizard implements the BIG storage policy by concatenating all the hard disk drives into a single volume.

FAST

In FAST storage policy, the I/O processing is balanced evenly to all drives in a method known as striping, equivalent to RAID 0. Striping increases storage operation speed by using several disk drives in parallel. Each portion of data is divided into segments that are written to different disks simultaneously. Striping provides improved performance but does not enhance reliability because there is no way to retrieve or reconstruct data stored on a failed drive. To implement the FAST storage policy, the Basic Configuration Wizard creates a single volume of four hard disk drives in a striped format. The remaining hard disk drive is designated as a standalone volume using the BIG storage policy.

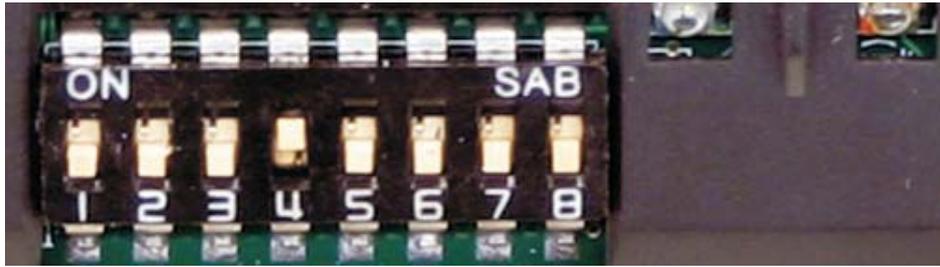
Note: After you change the storage mode, you would be lost all data in before storage mode, if you do not save the data to another place.

How to use the jumpers to change storage modes

IDENTIFYING THE JUMPERS

- The DIP SWITCH marked below are the only DIP SWITCH used to configure the 3058.(SEE FIG.A)
- DIP SWITCH 1 & 2 are used to select the mode for the 3058 PCB board
- DIP SWITCH 3 is used to enable GUI only configuration mode. This will override DIP SWITCH 4.
- DIP SWITCH 4 is used to initiate the mode defined by DIP SWITCH 1 & 2. Upon power-up the 3058 checks the DIP SWITCH looking to see if DIP SWITCH 4 is ON. If so, it resets its internal RAID mapping table based on the configuration of DIP SWITCH 1 & 2.
Resetting a configuration table is a destructive operation. All data on the disks will be lost. The size of the virtual disk reported to the host will change depending on the chosen RAID level.
- DIP SWITCH labeled “Verify” and “6” is used to enable mirror verification. When enabled, the 3058 will verify the mirror after it finishes a rebuild of a mirror set.
- DIP SWITCH labeled “INT RBLD” and “7” is used to force a rebuild of a mirror set when the 3058 is in SAFE mode. This jumper must be capped to initialize a rebuild when SAFE mode is set using DIP SWITCH 1 & 2.
- If, upon power up, DIP SWITCH 4 is not ON, no mapping table change will take effect (regardless of DIP SWITCH 1 & 2 settings) and the current mode is maintained.
- A power cycle is always required for a new mapping table change to take effect.

3058 Board



HOW TO USE THE JUMPERS TO CHANGE MODES

- **BIG mode (Concatenation)**
 - a. Power off the 3058
 - b. Connect the 3058 host port to your host computer's SATA port
 - c. DIP SWITCH 1 ON , DIP SWITCH 2 OFF.
 - d. DIP SWITCH 4 ON
 - e. Apply power
 - f. Wait 10 seconds; then, while power is still applied, DIP SWITCH 4 OFF
 - g. Using your host computer's disk utility (*My Computer* | *Manage* | *Disk Management* if using Windows) partition and format the disk.

- **FAST mode (RAID-0)**
 - a. Power off the 3058 board
 - b. Connect the 3058 host port to your host computer's SATA port
 - c. DIP SWITCH 1 OFF , DIP SWITCH 2 ON.
 - d. DIP SWITCH 4 ON
 - e. Apply power
 - f. Wait 10 seconds; then, while power is still applied, DIP SWITCH 4 ON
 - g. Using your host computer's disk utility (*My Computer*|*Manage* |*Disk Management* if using Windows)

- **SAFE mode (The hard drive on SATA port 0 will be mirrored to the hard drive on SATA port 1)**
 - a. Power off the 3058 board
 - b. Connect the 3058 host port to your host computer's SATA port
 - c. DIP SWITCH 1 & 2 ON.
 - d. DIP SWITCH 4 ON
 - e. Apply power
 - f. Wait 10 seconds; then, while power is still applied, DIP SWITCH 4 OFF..
 - g. Using your host computer's disk utility (*My Computer|Manage|Disk Management* if using Windows) DIP SWITCH 7 is ON, the 3058 will initiate a rebuild from disk 0 to disk 1 upon first power up in this mode.

- **JBOD mode (Requires a port-multiplier aware host)**
 - a. Power off the 3058
 - b. Connect the 3058 host port to your host computer's SATA port
 - c. DIP SWITCH 1 & 2 OFF.
 - d. DIP SWITCH 4 ON (When this DIP SWITCH is ON, it will reset the 3058 to whatever setting is defined by DIP SWITCH 1 & 2 (in this case BIG) when the 3058 board is powered on.)
 - e. Apply power
 - f. Wait 10 seconds; then, while power is still applied, DIP SWITCH 4 OFF.
 - g. Using your host computer's disk utility (*My Computer|Manage|Disk Management* if using Windows) partition and format the disk.

In order to see both drives in JBOD mode, your computer's SATA host controller must be port multiplier aware.

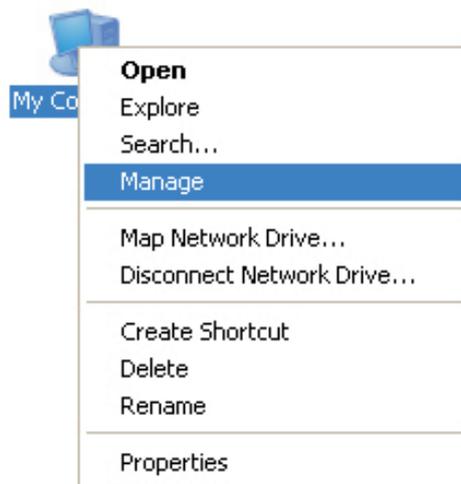
DIP SWITCH POSITION		MODE	JBOD	BIG	RAID0	RAID1
1	CONFIG0	STATUS TURE	OFF	ON	OFF	ON
2	CONFIG1		OFF	OFF	ON	ON
3	CONFIG2	GUI Configuration mode only				
4	CONFIG6	config update botton OFF: no change ON : update				
5	CONFIG7	NC				
6	RAID1 REBUILLD VERIFY	AUTO REBUILLD FOR RAID 1				
7	AUTO REBUILLD	AUTO REBUILLD FOR RAID 1				
8	BUZZER ON/OFF	USED RAID 1 REBUILLD				

In order to utilize the hard disk drive of your installation. You probable have to initialize your hard disk drive after storage mode made. This section explains how to partition volume after configuring them with the Jumper.

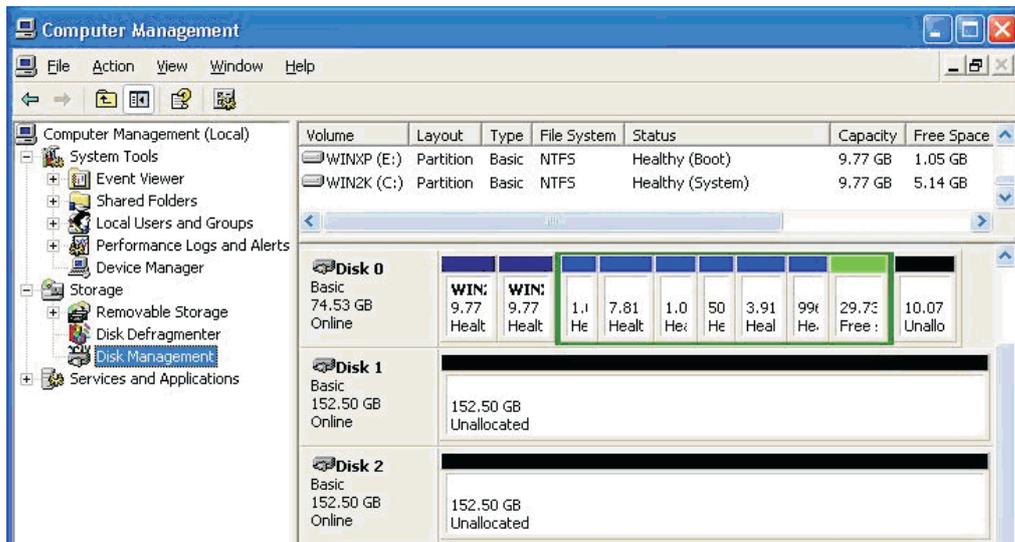
Partition a Volume

MS Windows

- 1. Right-click the My Computer icon and select Manage from the pop-up window**

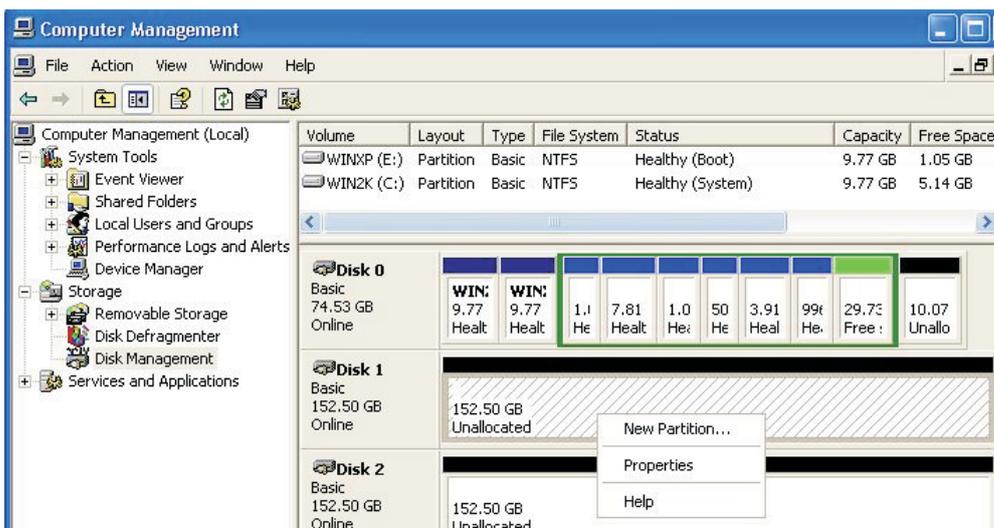


2. From the Computer Management window select Disk Management under Storage to open Windows Disk Manager

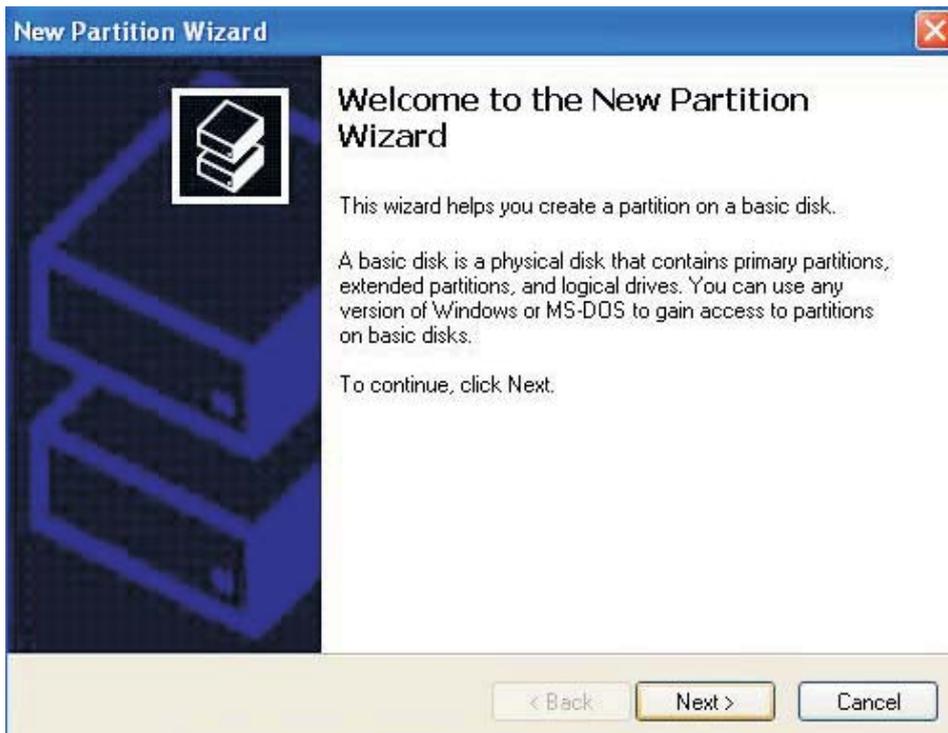


Note: The Disk numbers in the Windows Disk Manager may be different from the Volume numbers shown in the above. Be sure to select the correct disk based on the expected disk capacity to create a partition

3. Right-click on the configured disk's unallocated space and select New Partition. If the New Partition option is not available, select the disk and Initialize it first. To do this, right-click on the disk item and select "Initialize Disk"



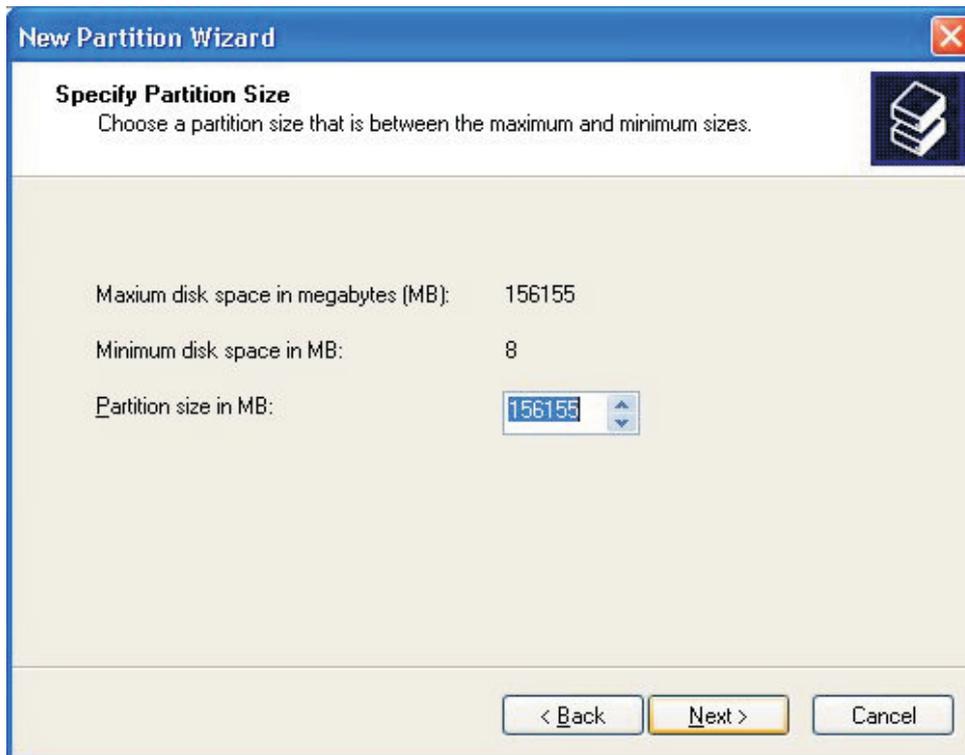
4. Click Next to start the Partition Wizard



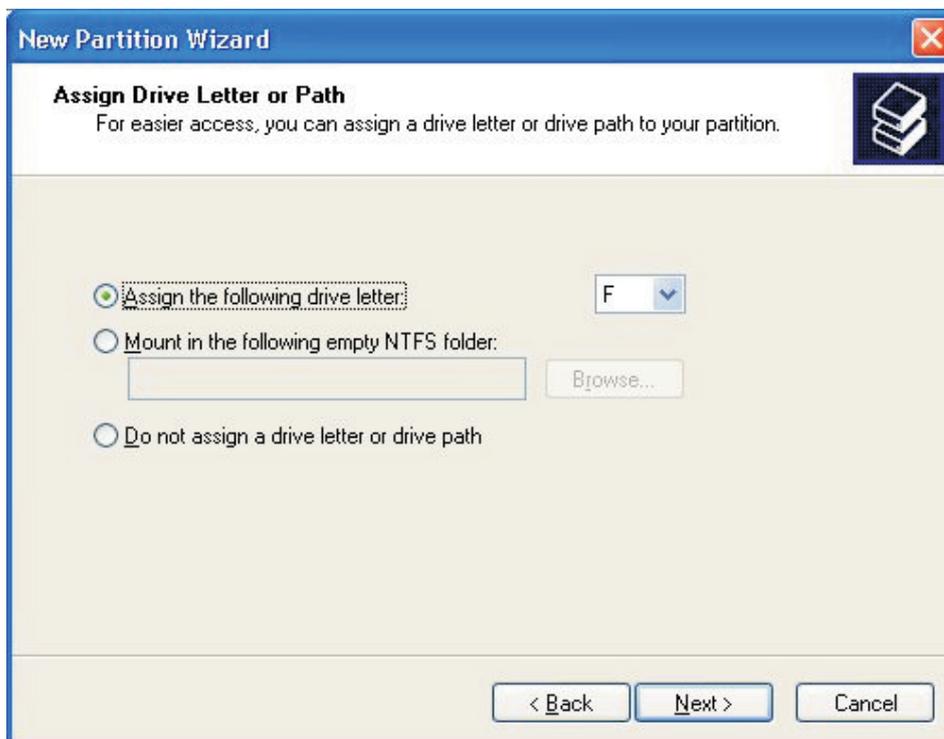
3. Select the Primary or Extended option and click Next



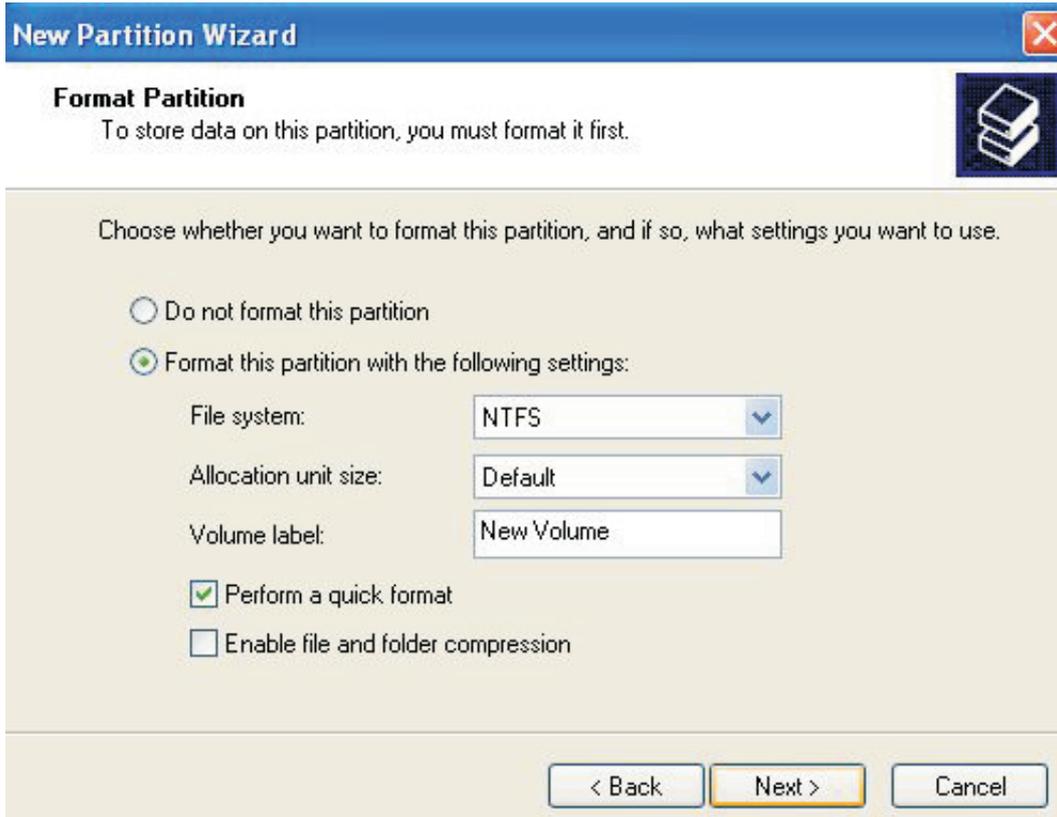
6. Specify the partition size. By default, the partition occupies the entire volume. Click Next.



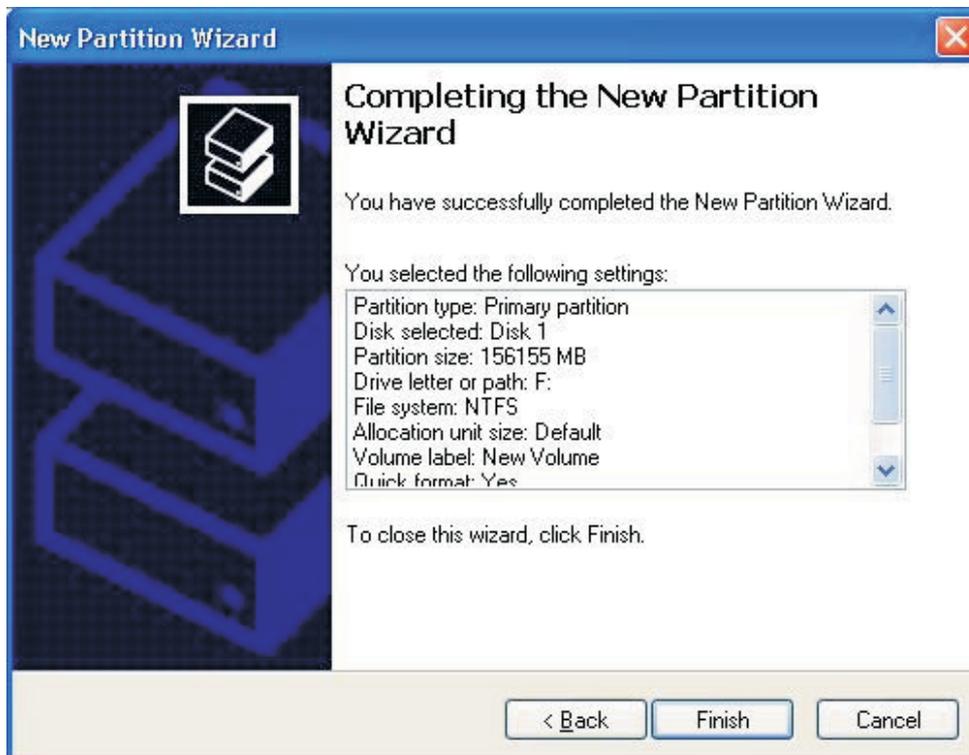
7. Assign a drive letter or mount path and click Next



8. Select file system and name the partition and click Next.



9. Review the file system settings and click Finish to create the logical partition



10. Repeat steps 1 through 9 to partition any remaining disks.