NexStar MX Series

NST-225MX-S3

2.5” SATA to USB3.0 Dual Bay RAID Enclosure

User Manual

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Package Contents

Dual 2.5” SATA 6 Gb/s to USB 3.0 HDD/SSD RAID Enclosure

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5) Quick Installation Guide
6) Installation Screws
7) Software CD

Introduction

Vantec NexStar® MX 2.5” Dual Bay External HDD Enclosure with USB 3.0 interface is a small and simple way to expand and protect your data anywhere. This compact form factor design can houses two small hard drive or Solid State Drive with Individual/JBOD/RAID0/RAID1 mode capability and can travel with it. This RAID in a box simplifies the configuration and at the same time provides maximum storage for your precious family photos, music, video, and games. The sturdy drive cage protects your hard drive while the aluminum case effectively draws away the heat; the front vents and the rear fan keep your hard drive(s) cool and improve performance. The Vantec NexStar® MX 2.5” is a high performance, high capacity, and durable portable storage solution and lets you store your personal data in an enclosure with style!

Front View **Rear View**

A. Fan

B. USB 3.0 Port

C. Power Switch

D. Power Socket

E. Power LED

F. HDD1 LED

G. HDD2 LED

Hard Drive Installation Guide

1. Remove the 4 screws shown.

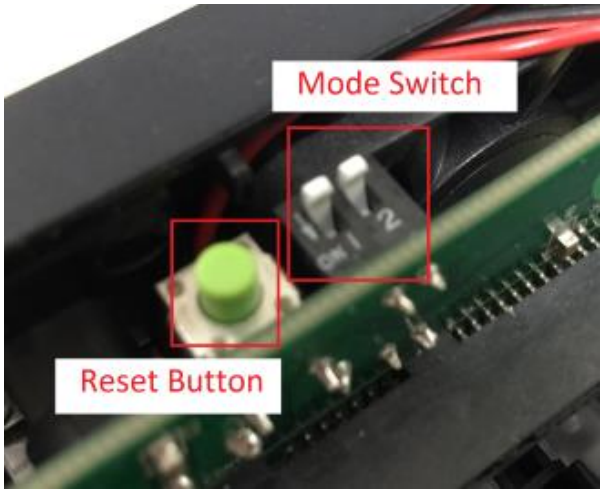
2. Slide out the enclosure cover.

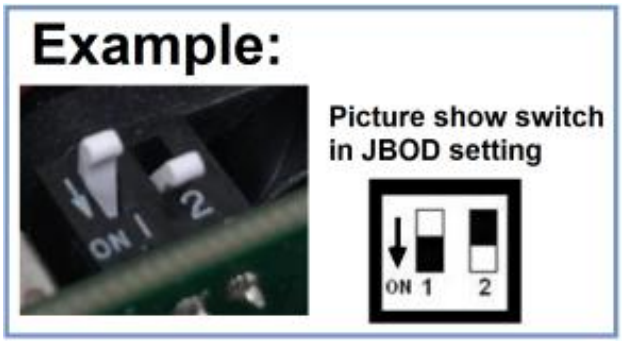
3. Insert the Second (lower) HDD/SSD in to the lower bay and push all the way in for the SATA interface on the tray to make full contact with the drive interface. The screw hole on the drive should align with the tray screw hole.

4. Insert the HDD/SSD into the top bay and push horizontally for both the SATA interface on the tray and drive to be fully inserted. The screw hole on the drive should align with the tray screw hole.

5. Secure both HDD/SSD with the 4 screws on each side of the Tray.

6. Set the RAID Mode Switch to the correct setting according to RAID SW definition table below.





IMPORTANT: If your drive have existing data AND you like to use it as Normal mode (Individual mode), set the switch to Normal Mode and DO NOT PRESS THE RESET BUTTON IN THE NEXT STEP (SKIP STEP #7).

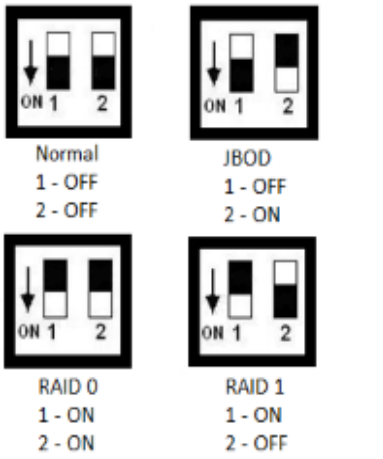
Note:

- ☆ **When you press the RESET button, it will cause a RAID mode change.**
- ☆ **HDD formatting is required whenever RAID mode changes. If you have important data on the drive, STOP, backup your data before you continue.**
- ☆ **Make sure the enclosure is powered on before changing RAID mode.**

Mode	Operation Mode Description
Normal (Individual)	**Normal** - Write each HDD independently two separate HDDs and their capacities
JBOD	**Just a Bunch of Disk** - It concatenates two disks to a single drive. Capacity equals to the sum of two disks.
RAID 0	**Stripe** - Write data evenly across both disks Capacity is double of the smaller HDD
RAID 1	**Mirror** - Create a mirror of data on both disks Capacity equals to that of the smaller HDD

RAID SW Definition

NOTE: White color is the toggle switch



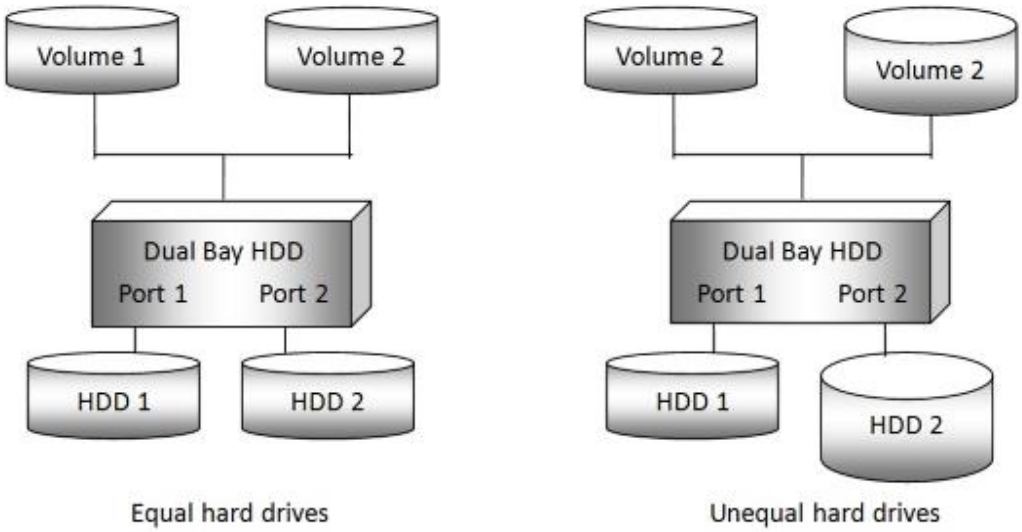
7. This Step will set the RAID mode. Connect the power cable to the enclosure and the ac adapter to your power outlet. While pressing the reset button, turn ON the power switch and continue to hold the reset button for another 10-15 seconds while the drive spin up and set the mode change. After 15 seconds later, you can release the reset button and the mode change is done. The Green HDD LED will continue to flash and the Red Power LED will be ON. You can now turn off the unit and continue with the next step.

8. Slide the cover back on to the Tray and secure using the 4 Screws.

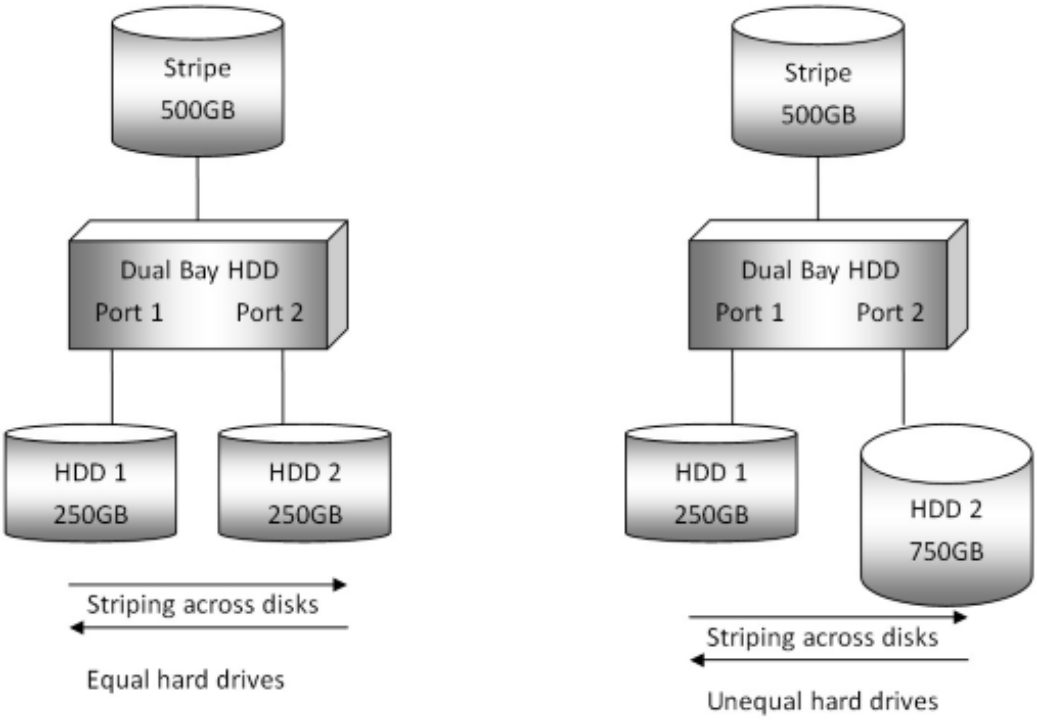
9. You can now start using your enclosure. If you need to initialize, partition and format the drive, please refer to Chapter on **Hard Drive Formatting Guide**.

RAID Mode Selection

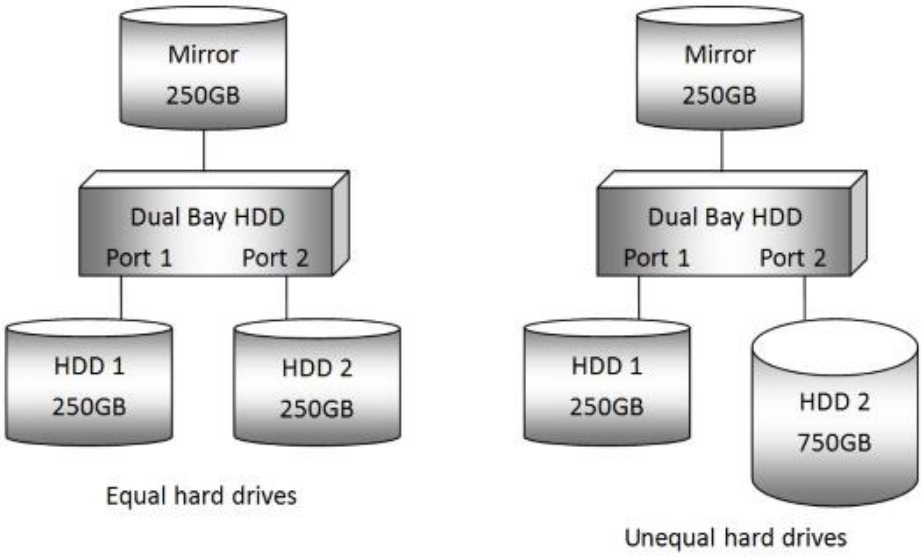
Normal (Individual): It enables each HDD to be seen separately as single drives.



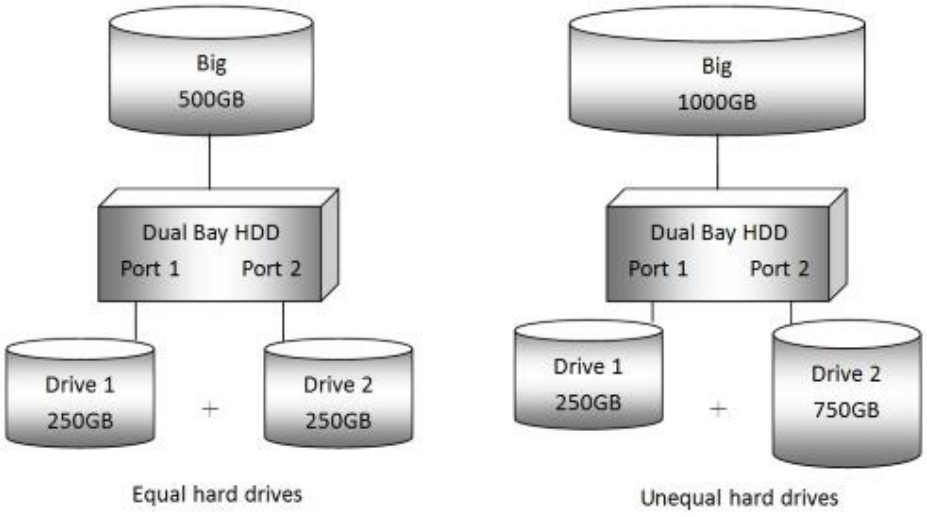
RAID 0 (Stripe): It’s a combination of two physical partitions where the data is striped between them. It presents the best data speed but no data redundancy.
Both HDDs allots the loading evenly. In short, RAID 0 stands for faster transmission.



RAID 1 (Mirror): It allows the device to automatically copy data to both HDDs. It stores all data in duplication to both drives to protect against data loss out of drive failure.
If one drive fails, the Mirrored volume is still usable, but it is in a vulnerable state since the other mirrored hard drive is inaccessible. When the offline drive resumes online, the appliance begins the rebuild process immediately to restore data redundancy.
Host access takes precedence in rebuild process. If you continue using the Mirror volume during the rebuild, the rebuild process will take a longer time to complete, and the host data transfer performance will also be impacted.



JBOD (BIG or LARGE): It concatenates a series of physical HDDs as a single large volume; HDD 1 and 2 are combined into a storage capacity that is equal to the sum of both HDDs.

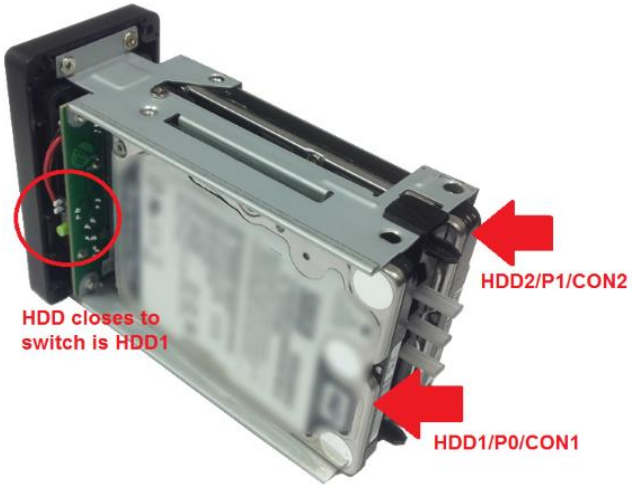


Resources

The section contains information that will help answer questions about this product.

Drive mapping for HDD LED / RAID AP / PCB

LED	JMicron HW RAID Manager	Physical Location on PCB printout
HDD 1	P0 port	CON1
HDD 2	P1 port	CON2



LED – Normal Status

Situation			LED status		
			HDD1	HDD2	Power
PC in Sleep Mode S3/S4/S5			OFF	OFF	RED
USB, HDD1 & 2 connected			ON	ON	GREEN
Normal (Individual)	HDD1 access		Flashing	ON	GREEN
	HDD2 access		ON	Flashing	GREEN
RAID 0 (Strip)			Flashing	Flashing	GREEN
RAID 1 (Mirror)	Data Access		Flashing	Flashing	GREEN
	Rebuild	Online	Both, Flashing until finished		GREEN
		Offline	Both, Flashing until finished		GREEN
JBOD (Big)	HDD1 access		Flashing	ON	GREEN
	HDD2 access		ON	Flashing	GREEN
MODE change (USB connected to system)			Flashing	Flashing	GREEN

LED – ERROR Status

Normal Mode (Individual)

	Operation					Activities						
Operations	**PWR**	**USB Linked**	**HDD #1**	**HDD #2**	**System Power**	**HDD1 Power**	**HDD2 Power**	**LED HDD1**	**LED HDD2**	**LED PWR**	**FAN**	**Comments**
HDD1 Error	ON	Linked	Error	Read Write	ON	OFF	ON	Flash at fix 0.5Hz	Flash	Green	ON	HDD1 error, spin down, LED Flash at fixed 0.5Hz
HDD2 Error	ON	Linked	Read Write	Error	ON	ON	OFF	Flash	Flash at fix 0.5Hz	Green	ON	HDD2 error, spin down, LED Flash at fixed 0.5Hz

RAID 0 Mode (Strip)

	Operation					Activities						
Operations	**PWR**	**USB Linked**	**HDD #1**	**HDD #2**	**System Power**	**HDD1 Power**	**HDD2 Power**	**LED HDD1**	**LED HDD2**	**LED PWR**	**FAN**	**Comments**
HDD1 Error Sector Error HDD Failure	ON	Linked	Error	D/C	ON	OFF	OFF	Flash at fix 0.5Hz	Flash	Green	OFF	HDD1 error, both HDD spin down, LED Flash at fixed 0.5Hz
HDD2 Error Sector Error HDD Failure	ON	Linked	D/C	Error	ON	OFF	OFF	Flash	Flash at fix 0.5Hz	Green	OFF	HDD2 error, both HDD spin down LED Flash at fixed 0.5Hz

JBOD Mode (BIG)

	Operation					Activities						
Operations	**PWR**	**USB Linked**	**HDD #1**	**HDD #2**	**System Power**	**HDD1 Power**	**HDD2 Power**	**LED HDD1**	**LED HDD2**	**LED PWR**	**FAN**	**Comments**
HDD1 Error HDD Failure	ON	Linked	Error	D/C	ON	OFF	ON	Flash at fix 0.5Hz		Green	ON	HDD1 error & spin down
HDD2 Error HDD Failure	ON	Linked	D/C	Error	ON	ON	OFF		Flash at fix 0.5Hz	Green	ON	HDD2 error & spin down

RAID 1 Mode (Mirror)

	Operation					Activities						
Operations	**PWR**	**USB Linked**	**HDD #1**	**HDD #2**	**System Power**	**HDD1 Power**	**HDD2 Power**	**LED HDD1**	**LED HDD2**	**LED PWR**	**FAN**	**Comments**
HDD1 Error	ON	Linked	Error	Read Write	ON	OFF	ON	Flash at fix 0.5Hz	Random Flash	Green	ON	HDD1 error & spin down
HDD2 Error	ON	Linked	Read Write	Error	ON	ON	OFF	Random Flash	Flash at fix 0.5Hz	Green	ON	HDD2 error & spin down
RAID Rebuild Source:HDD1 Target:HDD2	ON	D/C	Old	New		ON	ON	Flashing at 3Hz	Slow Flash at 0.5Hz	Green	ON	Rebuilding reconstructing HDD2
RAID Rebuild Source:HDD2 Target:HDD1	ON	D/C	New	Old		ON	ON	Slow Flash at 0.5Hz	Flashing at 3Hz	Green	ON	Rebuilding reconstructing HDD1
Rebuild error Source:HDD1 Target:HDD2	ON	D/C	Old	New		ON	ON	Stop Flashing	Slow Flash at 0.5Hz	Green	ON	Rebuilding reconstructing HDD2
Rebuild error Source:HDD2 Target:HDD1	ON	D/C	New	Old		ON	ON	Slow Flash at 0.5Hz	Stop Flashing	Green	ON	Rebuilding reconstructing HDD1
Rebuild Completed	ON	D/C	Mirrored	Mirrored		D/C	D/C	0.5Hz	0.5Hz	Green	D/C	Rebuilding Completed

Important Note!

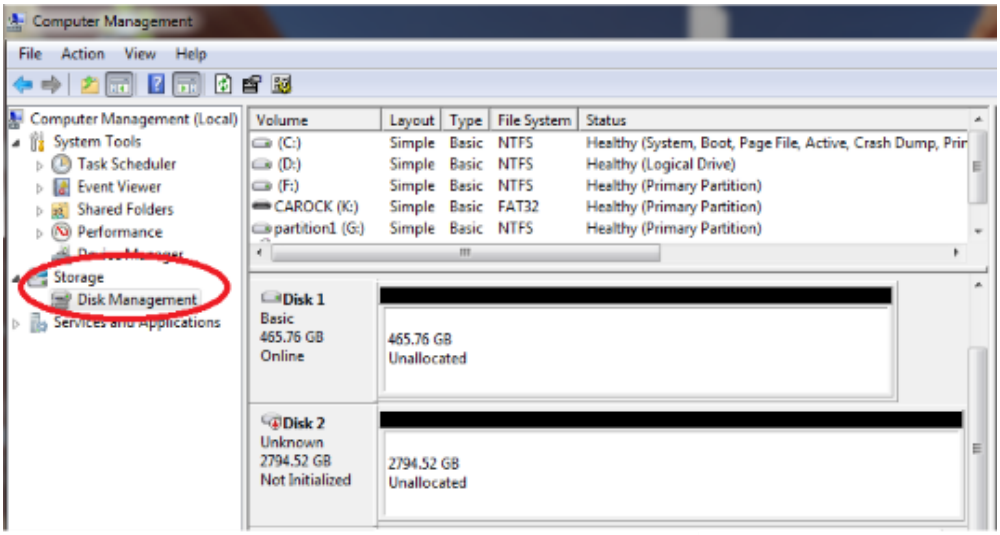
- All HDDs must be re-initialize, partition and formatted on every mode change operation.
- All new HDDs must be initialize, partition and formatted in this enclosure when used in this enclosure for the first time, except use of old HDDs under Normal mode**.
- HDD capacity beyond 2TB are support via GPT (GUID) Windows Vista/7/8.1/10, OS X, and Linux.
- Windows® XP 32bit OS cannot support capacity over 2TB HDD(s) and cannot be used in this enclosure.

** If the hard drives was from another enclosure formatted differently, this enclosure may not read it correctly.

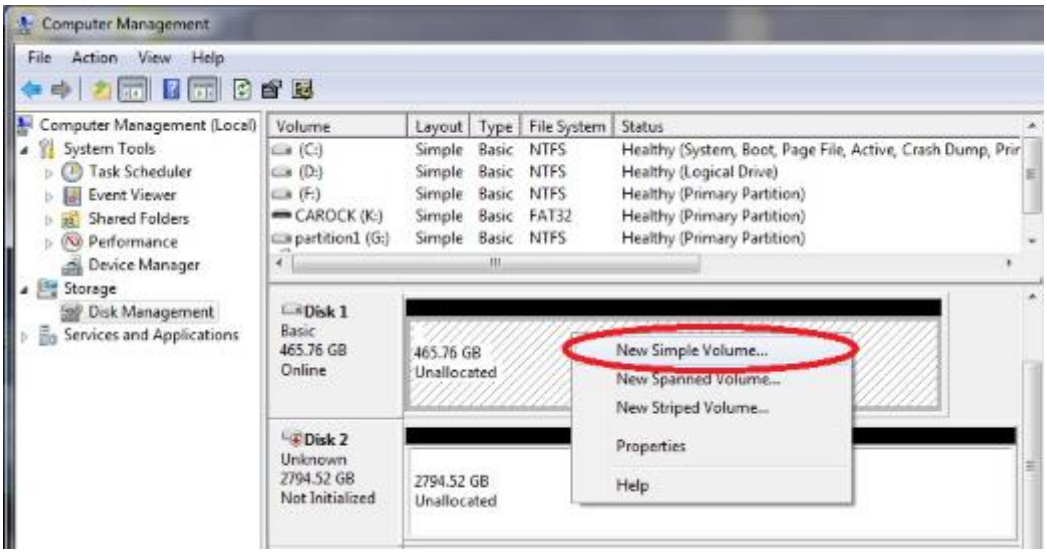
Hard Drive Formatting Guide

Partition a volume under Windows® OS

1. Right-click on the Computer icon (Windows 7) and select Manage from the drop-down window. If you are using Windows 8.1, press the Windows key and X key on your keyboard at the same time and select Computer Management. From the Computer Management window select Disk Management under Storage to start this process.



2. Right-click on the “Unallocated” space and select “New Simple Volume”.
   If this option is not available, the disk was not initialized. You must initialize the disk first before you can continue. Please stop here and go to the section on “**Initialize a Disk**” to initialize the disk before return to this section on “**Partition a volume under Windows OS**”.

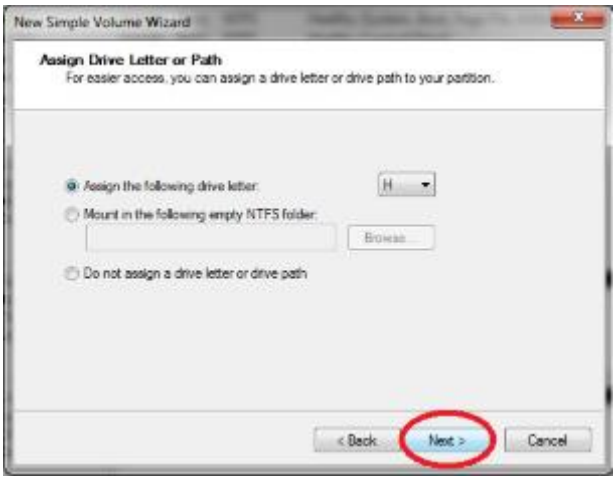


3. Click “Next” to start the New Simple Volume Wizard.

4. Specify the partition size. If you are not sure, by default the partition occupies the entire volume. Click “Next”.

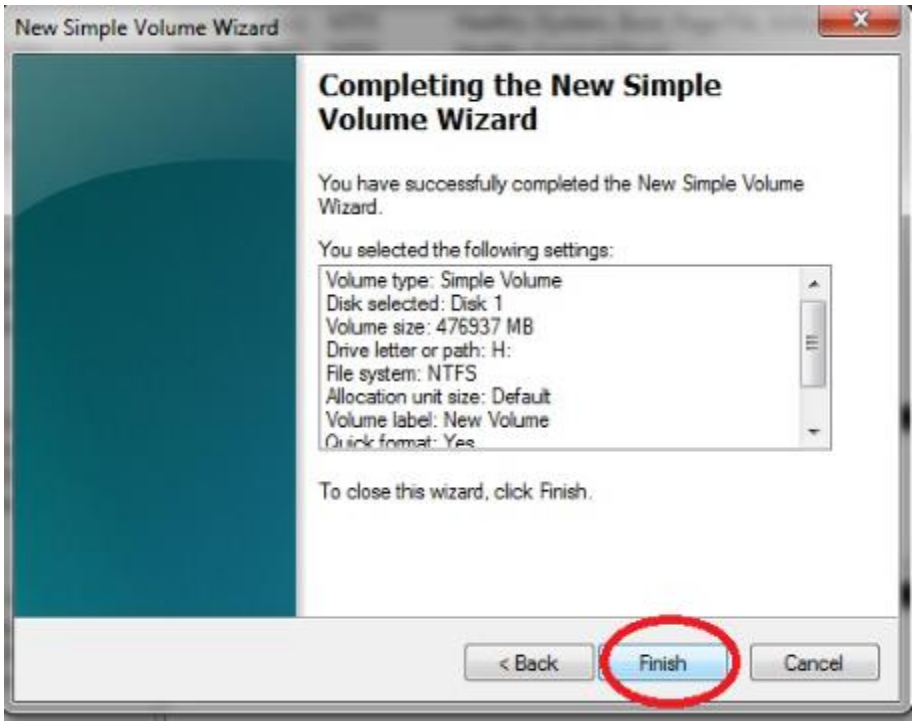
5. Assign a drive letter. If you are not sure, the system will automatically assign the next

available drive letter, click “Next”.



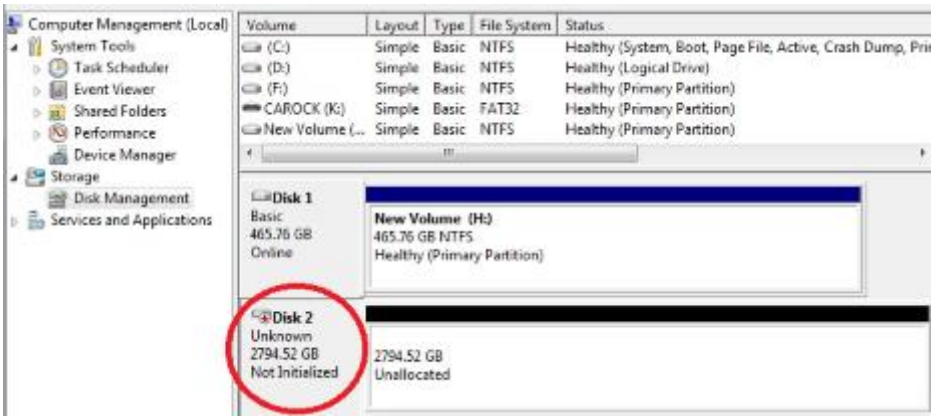
6. Change the Volume name; if you are not sure, by default the system will assign a volume, you can change it later. Click “Next” to start the formatting.

7. Review the file system settings and click “Finish” to create the logical partition.

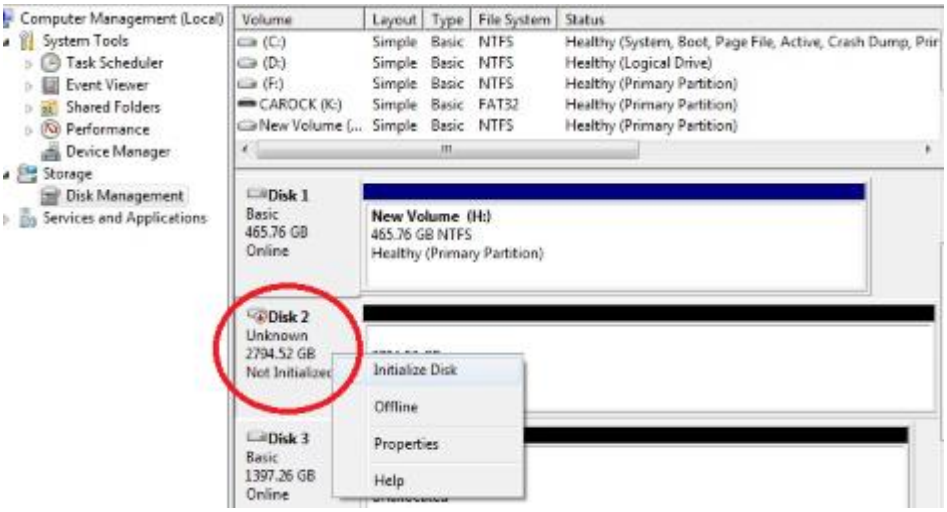


Initialize a Disk

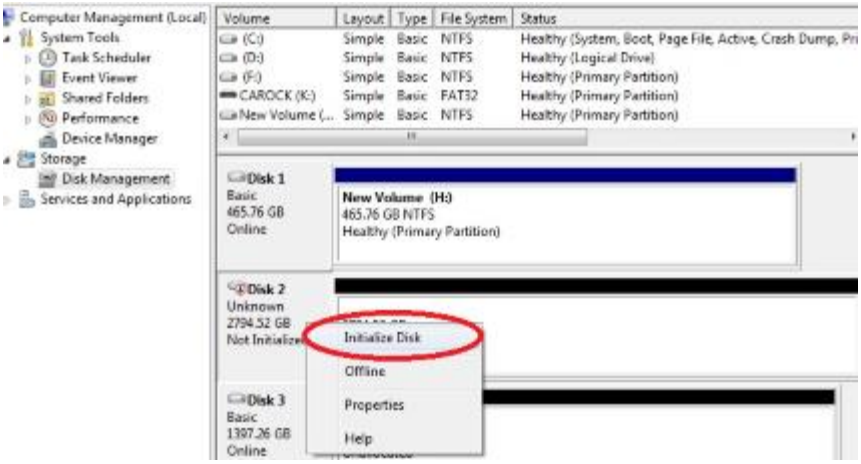
1. New disk need to be initialize before they can be used. Here are the steps for initializing a new disk before you can create a volume to format the drive.



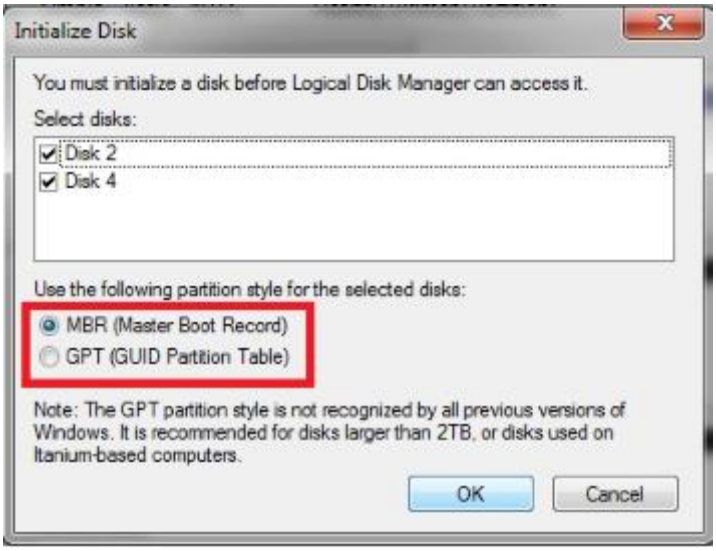
2. Right-click on the “Not Initialized” box.



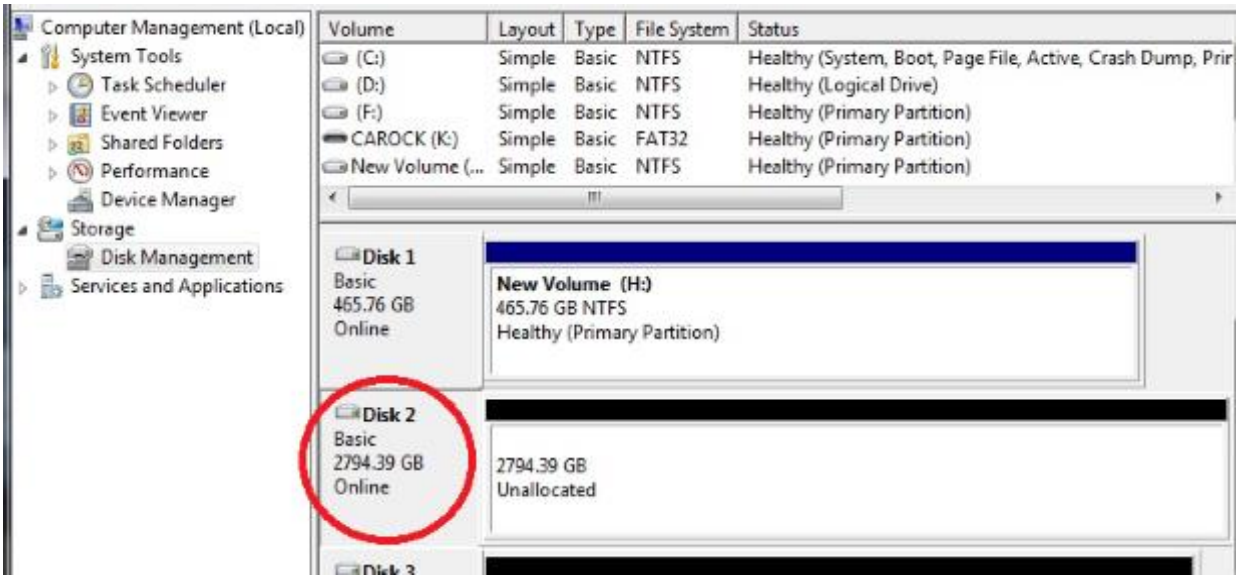
3. Select “Initialize Disk”.



4. Windows 7/8.1 provides options for “MBR” or “GPT”. Please select “MBR” if your drive capacity is less than 2TB. If the capacity is over 2TB, please select “GPT”. And select “OK”.

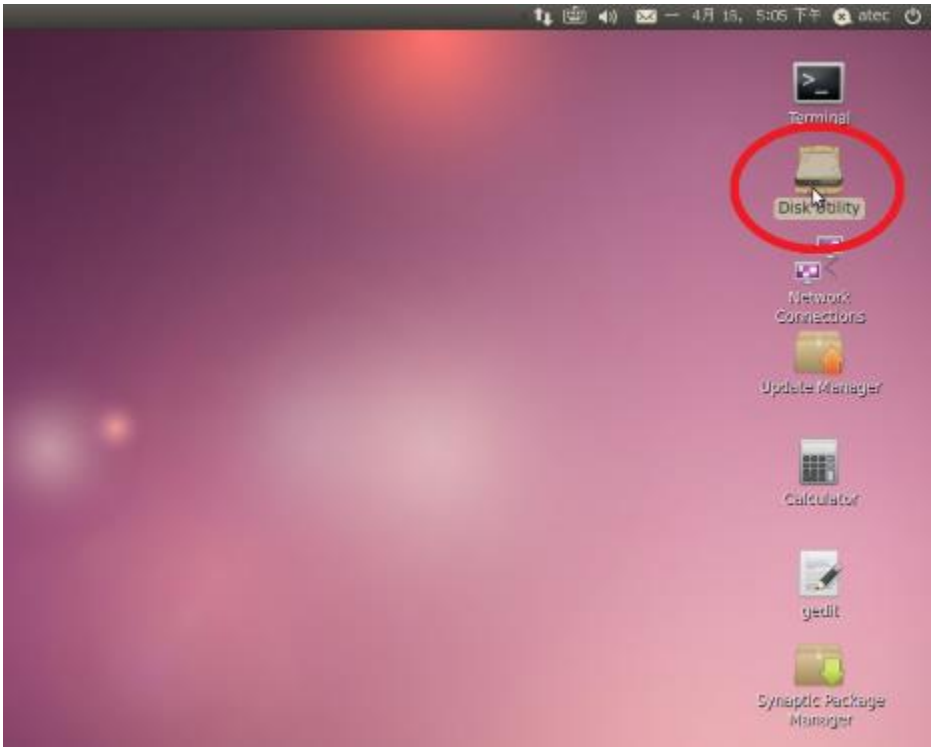


5. “Online” message will replace “Not Initialized” message when disk is initialized and ready for disk partitioning and formatting.

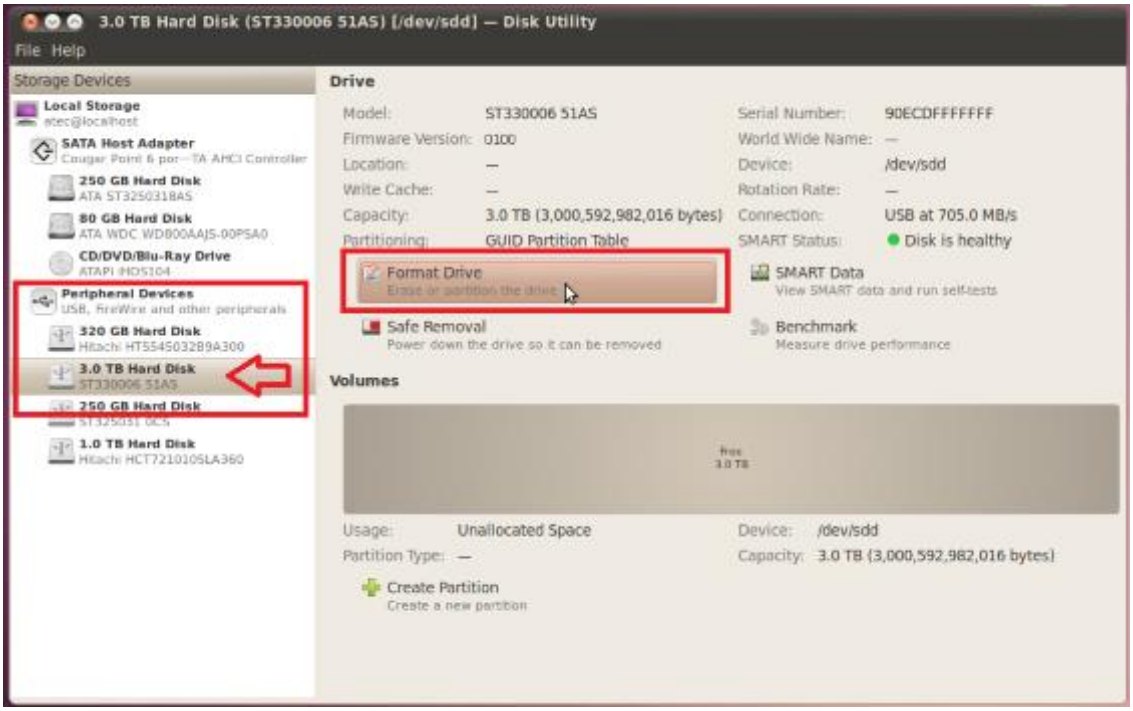


Partition a volume under Linux Ubuntu®

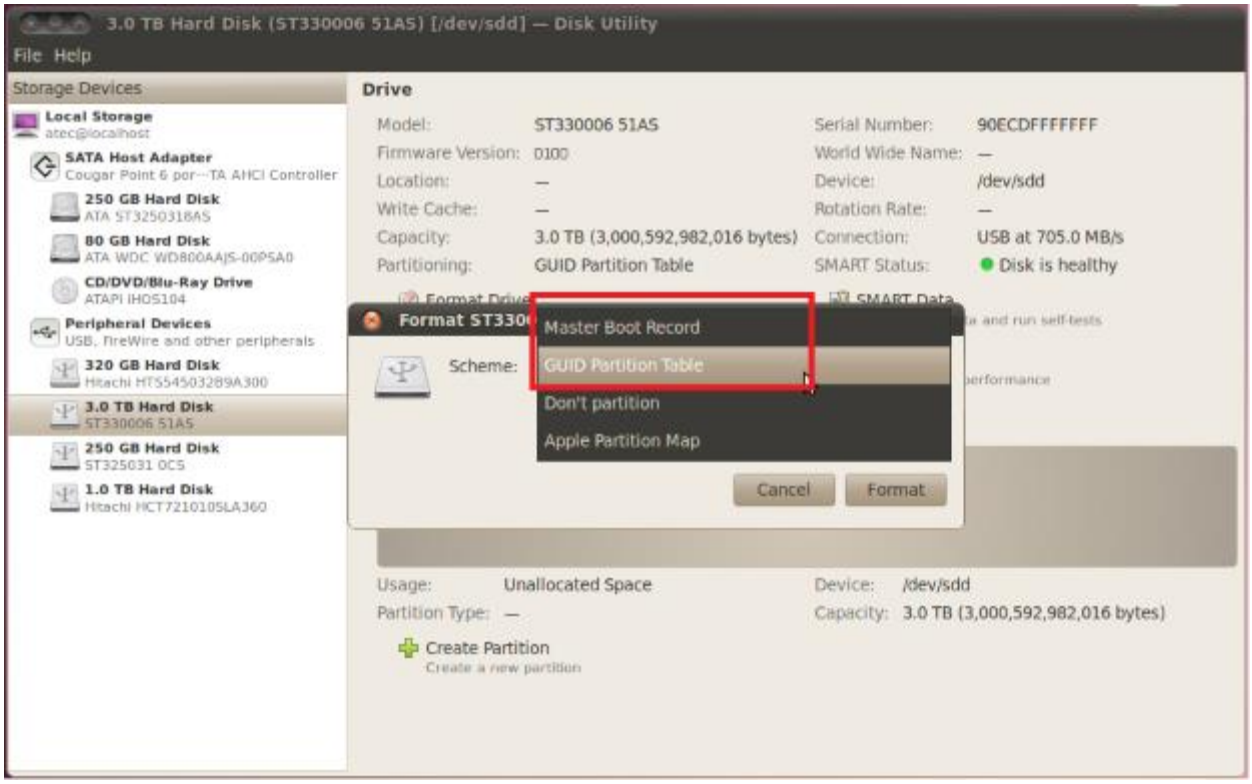
1. Click "**Disk Utility**" on the Desktop



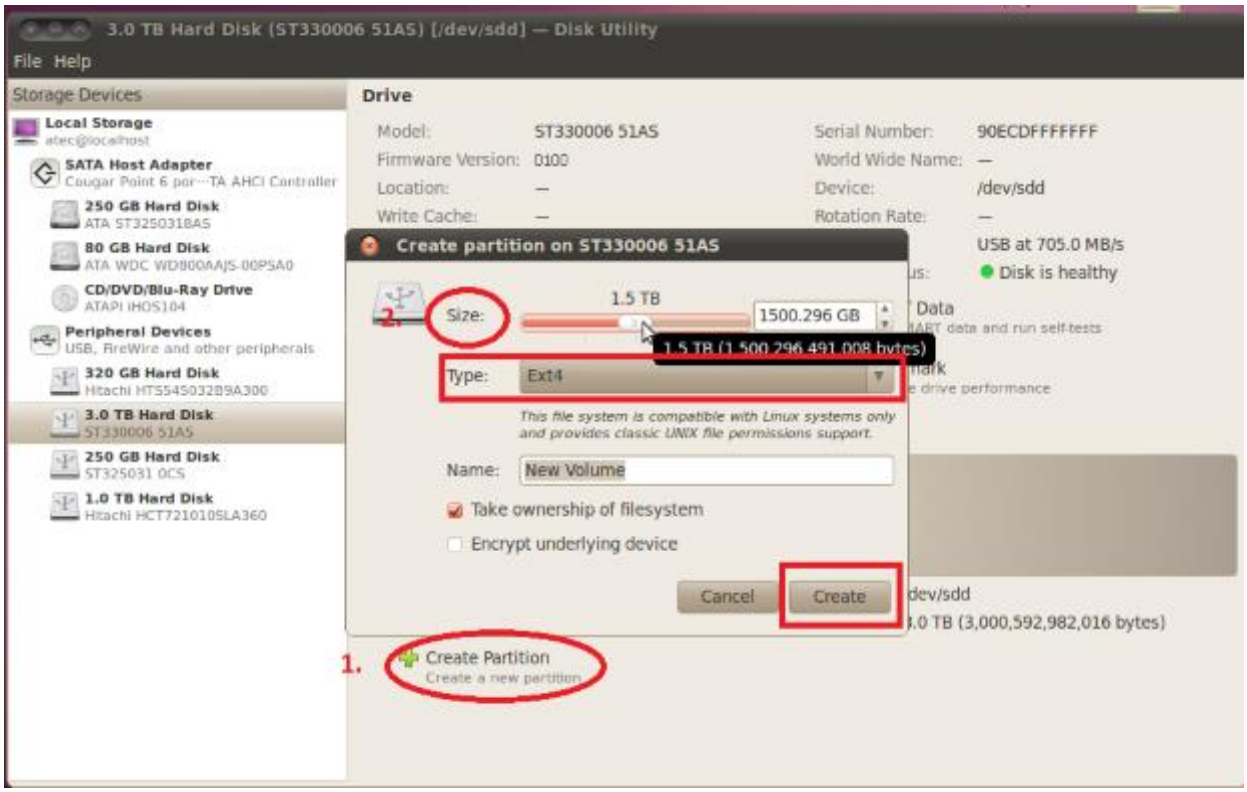
2. Find HDD(s) under **"Peripheral Devices"**, choose the HDD(s) and click "**Format Drive**"



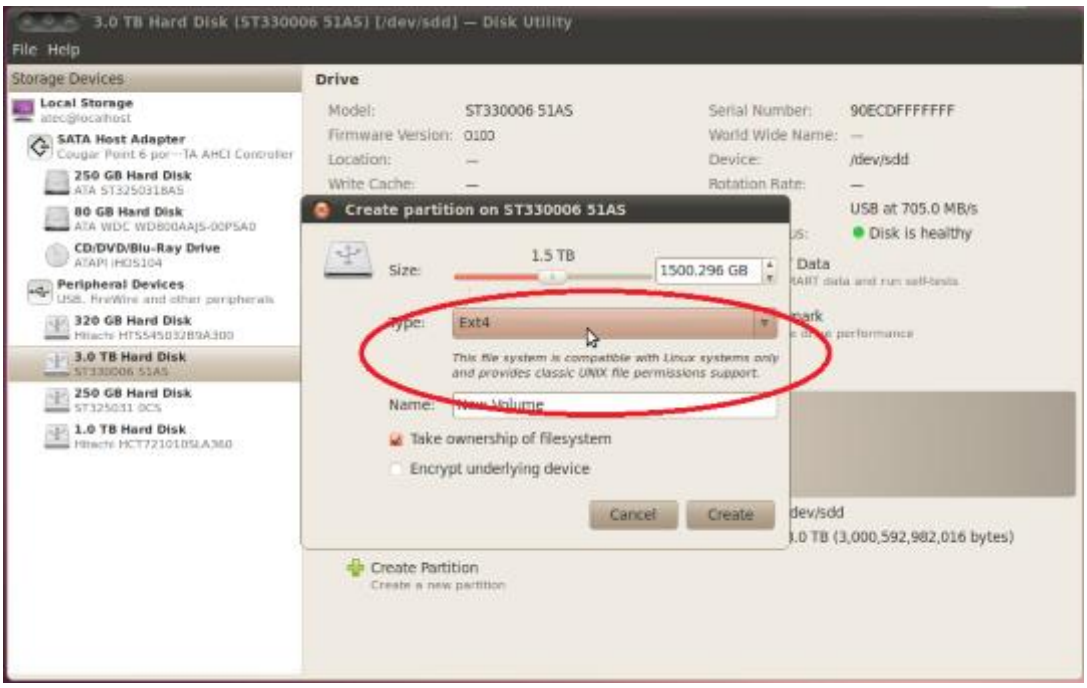
3. Select **"Master Boot Record"** if capacity per HDD does not exceed 2TB. Select **"GUID Partition Table"** if capacity per HDD is over 2TB. Press "**Format**" to proceed.



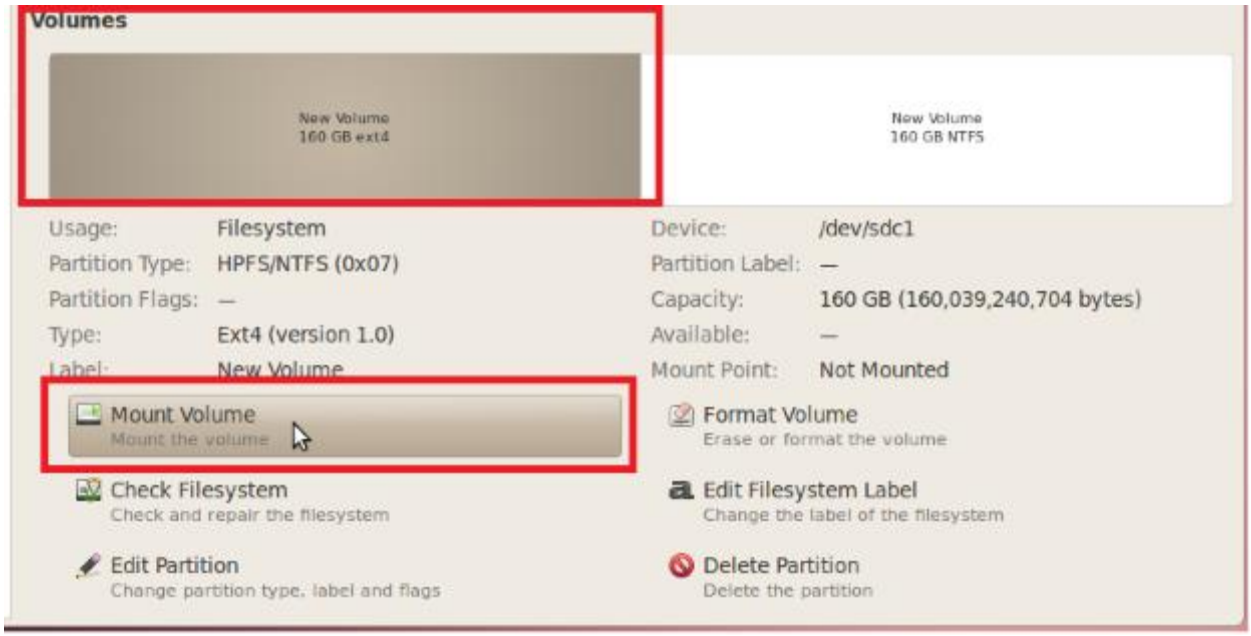
4. Select **"Create Partition"**, and then slide the bar to draw towards the desired capacity for the HDD(s). Select "**Type"** of format and press "**Create**" to proceed.



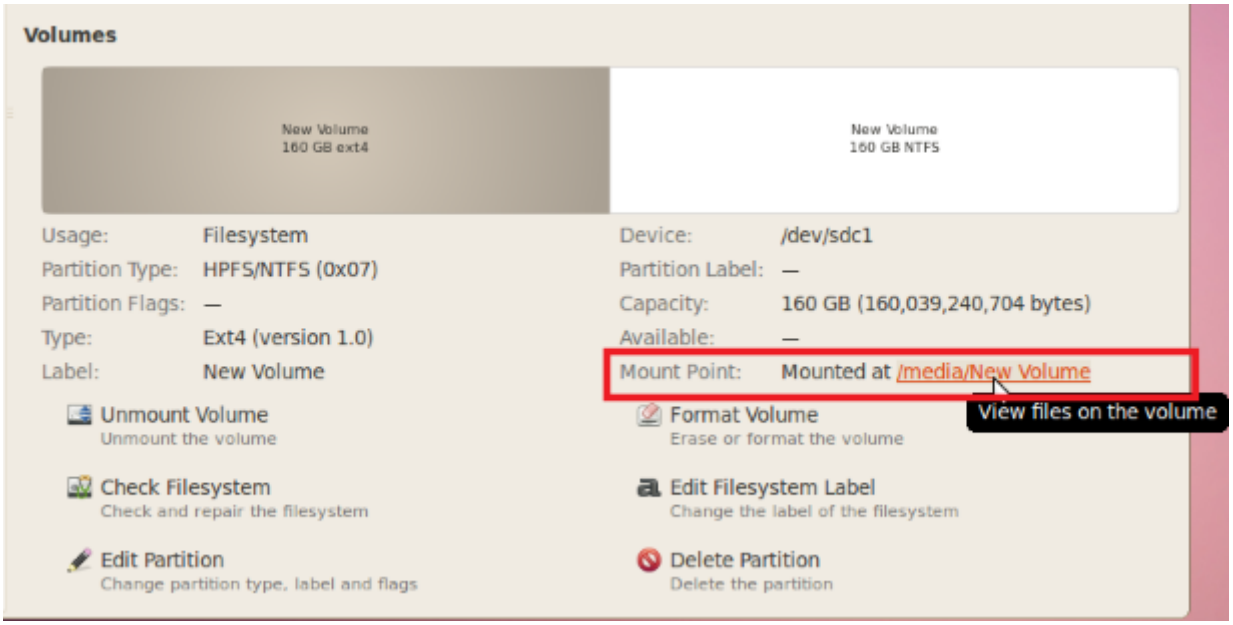
NOTE: some formats cannot be used under popular OS i.e.: Windows. Refer to the circled block for details.



5. **“New Volume”** appears after partitioning completes, select **“Mount Volume”**

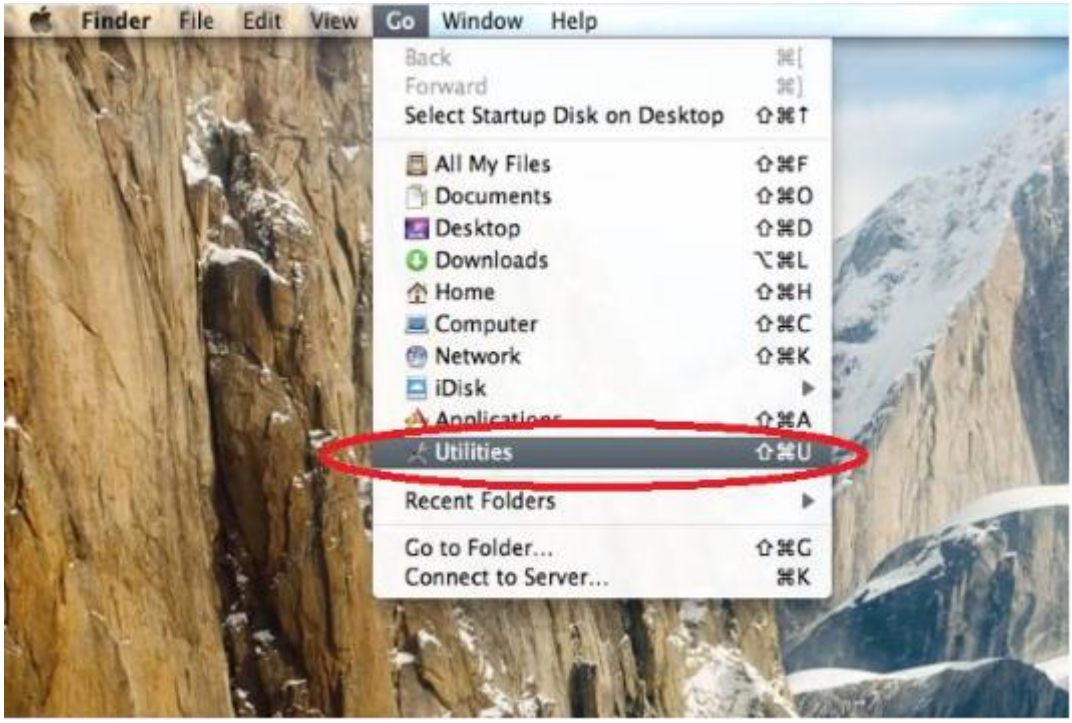


6. Select **“Mount Point”** to access the HDD.



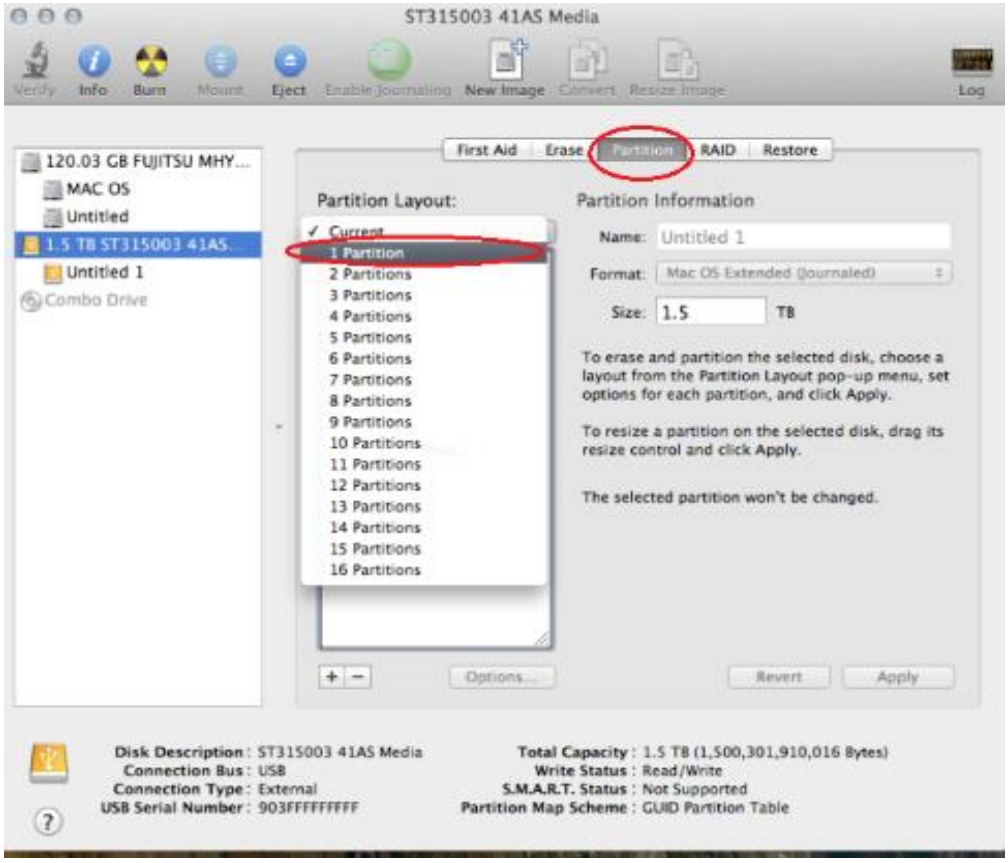
Partition a volume under Mac® OS

1. Right click on the **“Go”** icon and select **“Utilities”** from the drop-down window.

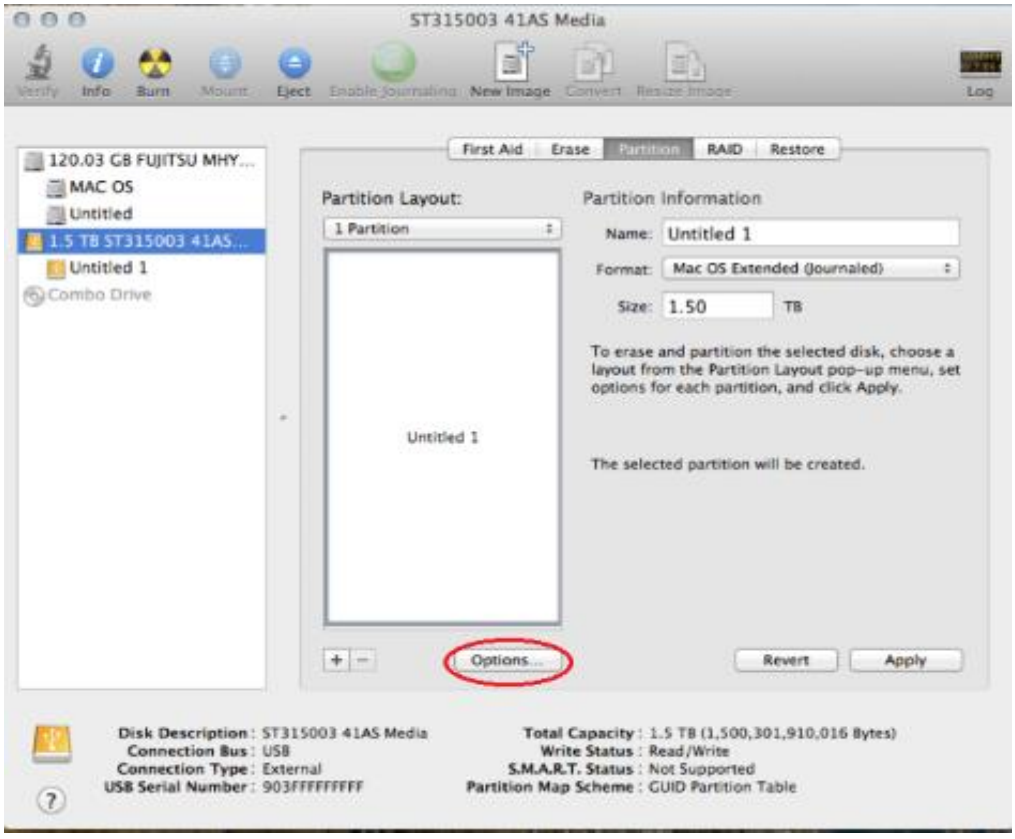


2. Select **“Disk Utility”**

3. Select **"Partition"** on the top of the window, then select 1 partition from the "**Partition Layout"**

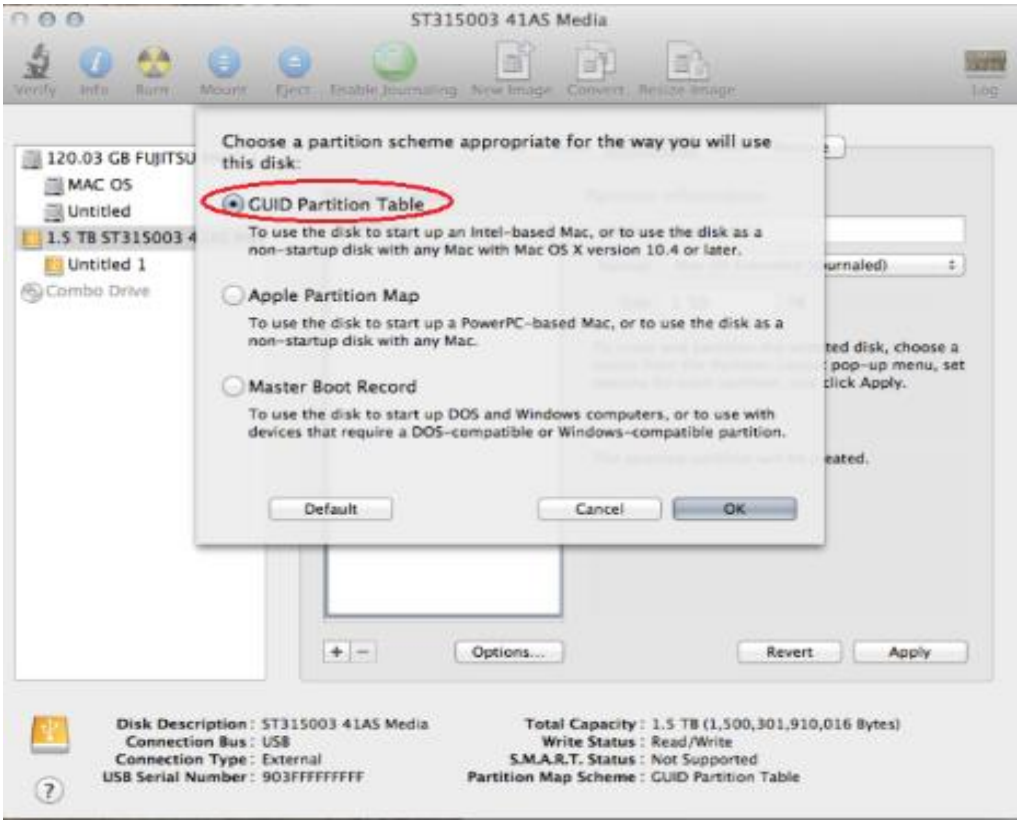


4. Select **"Options"** at the bottom of the window.



5. Select **"GUID Partition Table".** Currently, most of the Mac computers are Intel based. To enhance the best compatibility, make sure **GUID Partition Table** is selected.

   Note: For PPC Mac, please select **"Apple Partition Map"**



6. Select "Apply" to finish formatting a hard drive