

Hydra S2

*4-Bay Storage Enclosure for
3.5" Serial ATA Hard Drives*



User Manual

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EN

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Chapter 1 - Introduction

Icon Key

Throughout this manual you will see icons on the left margin that denote either notes or special remarks as outlined below:



General notes and tips.



Important information.



Features mentioned in this manual may vary between different models.

The Hydra S2

Maximise your storage capacity with four 3.5" SATA hard drives with the Hydra 4-Bay SATA Enclosure. An ultra durable aluminium casing provides efficient heat dissipation, plus an extra large powerful rear fan keeps your hard drives cool during long hours of operation. Advanced RAID technology provides extra protection for all your valuable data content.

Product Dimensions: 24.5cm x 17.7cm x 13.5cm
 9.6in x 7in x 5.3in

Other Available Interfaces

- FireWire 400/800 & USB 2.0
- USB 2.0 & eSATA
- Gigabit Ethernet

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To enter the RAID setup menu, press and hold the CONFIRM button for 3 seconds until the three RAID mode LEDs blink two times. Use the MODE button to select the new RAID mode and then press the CONFIRM button within 10 seconds to confirm the new setting.



Changing the RAID setup will require you to re-format the drives. Make sure you backup all data before doing so.

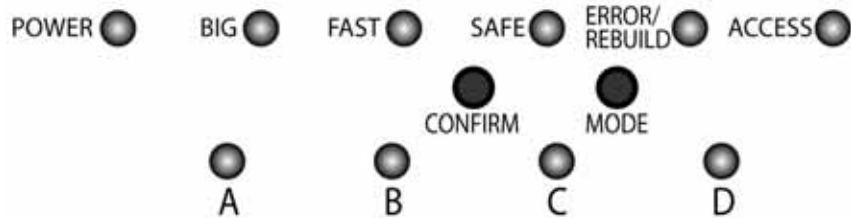


When only two hard drives (A & B) are installed, the blinking LEDs for C & D can be ignored.

Detailed View

Front View

LED indication and buttons as seen beneath the front panel of the Hydra S2.



LED or Button	Status or Function
POWER	<ul style="list-style-type: none"> • OFF = Power off • Blue = Power on
BIG	<ul style="list-style-type: none"> • Yellow = BIG mode active (JBOD spanning)
FAST	<ul style="list-style-type: none"> • Amber = FAST mode active (RAID 0 striping + striping)
SAFE	<ul style="list-style-type: none"> • Green = SAFE mode active (RAID 1 mirroring)
SAFE & FAST	<ul style="list-style-type: none"> • Green & Amber = SAFE II mode active (RAID 10 mirroring + striping)
ERROR/REBUILD	<ul style="list-style-type: none"> • Red = Error • Green = Rebuilding data in SAFE mode
ACCESS	<ul style="list-style-type: none"> • Blue = Ready for data access • Blinking = Accessing data
CONFIRM	<ul style="list-style-type: none"> • To change and confirm the RAID mode (press 3 seconds to enter setup menu)
MODE	<ul style="list-style-type: none"> • RAID mode selector button
HDD A, B, C, D	<ul style="list-style-type: none"> • Green = HDD status OK • Blinking red & green = Error or no HDD • Blinking red & solid green = Data access • Blinking green & solid red = Rebuilding



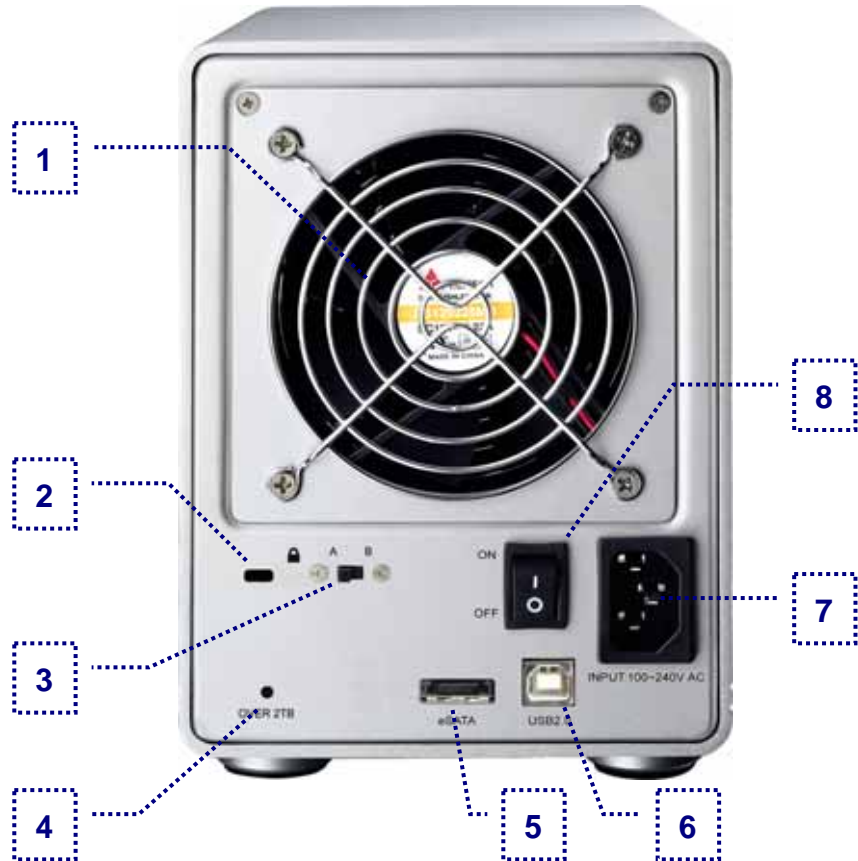
If your Operating System does not support single volumes larger than 2TB, make sure the 2TB volume switch on the Hydra is at position B, so that larger volumes are automatically split into two smaller ones.



The 2TB LED indication will light up when the total capacity of the installed hard drives exceeds 2TB. This is not related to the RAID mode but an indication to remind you that a single volume will exceed 2TB in capacity.

Rear View

- | | |
|--------------------------|--------------------------------|
| 1. Smart fan | 5. eSATA port |
| 2. Security lock slot | 6. USB 2.0 port |
| 3. 2TB volume switch | 7. Power receptacle (100-240V) |
| 4. 2TB volume indication | 8. Power supply ON/OFF switch |



2TB Volume Switch

When the total capacity of the installed drives exceeds 2TB, the 2TB LED will light up. When the 2TB switch is set to B, volumes larger than 2TB will automatically be split into two smaller volumes (A+B / C+D). If your Operating System supports volumes larger than 2TB (e.g. 64bit OS), setting the 2TB switch to A will create one large volume instead.

Smart Fan

The smart fan automatically regulates the fan speed according to the internal temperature. It will start using low speed from 0-44 degrees, increase the speed every 5 degrees until 60 degrees and use full speed above 61 degrees Celsius.

System Requirements

PC Requirements

- Minimum Intel Pentium III CPU 500MHz, 128MB RAM
- eSATA equipped PC with port multiplier; Windows XP/Vista
- USB 2.0 (USB 1.1) equipped PC; Windows 2000/XP/Vista

Mac Requirements

- Minimum Apple G4 processor, 128MB RAM
- eSATA equipped Mac with port multiplier; OS 10.4 or above
- USB 2.0 (USB 1.1) equipped Mac; Mac OS 10.2 or above

Supported Hard Drives

- Up to four 3.5" SATA-I or SATA-II hard drives (1.5Gb/s)
- 20GB - 1TB per HDD
- For the FAST and SAFE mode, hard drives of identical capacities are recommended



Package Content may vary, depending on vendor & version.

Package Contents

- Hydra S2 (no HDD included)
- Power cord
- Interface cables
- Manual

About Data Backup

To protect your files and help prevent the loss of your data, we strongly recommend that you keep two copies of your data, one copy on your Hydra and a second copy either on your internal drive or another storage media such as CD, DVD, Tape or an additional external drive.

Any loss or corruption of data while using the Hydra is the sole responsibility of the user, and under no circumstances will the manufacturer be held liable for compensation or the recovery of this data.



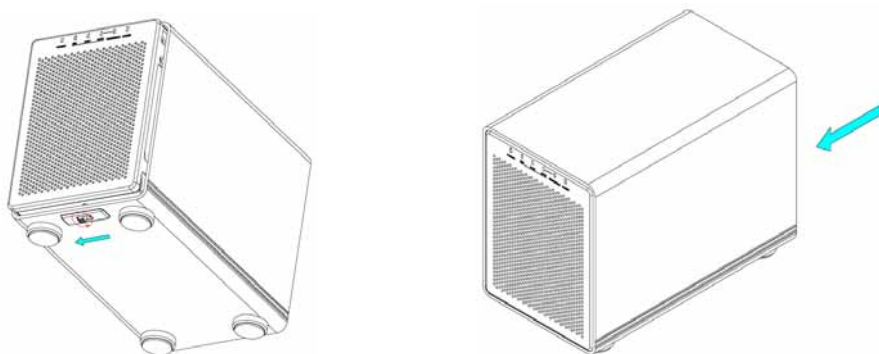
Your unit may come with pre-installed hard drives. Before opening such an enclosure, please read the warranty from your vendor carefully, as this could void your warranty.



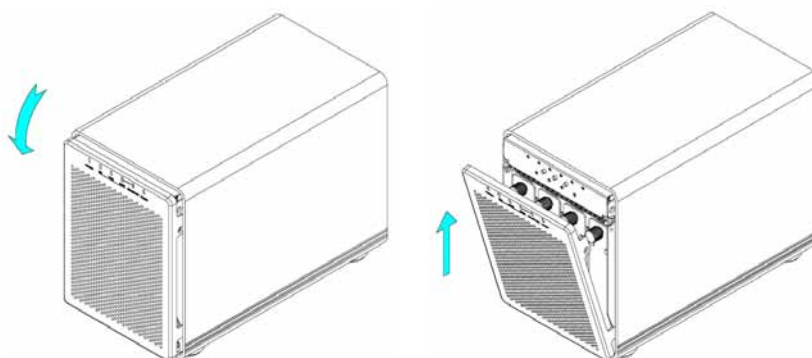
When replacing a faulty hard drive, the device does not have to be turned off during the replacement.

Chapter 2 - Hard Drive Assembly

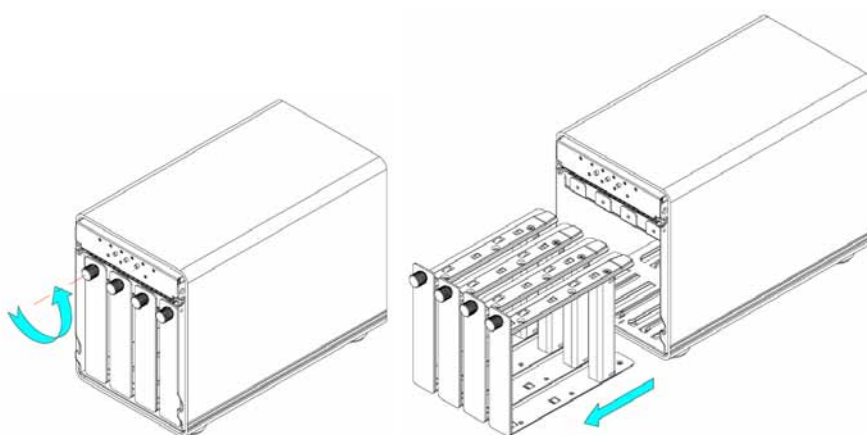
1. Unlock the switch at the bottom of the case and push the inner chassis from the back until the front panel is out of the housing.



2. Pull the front panel out and then lift it up to remove it.



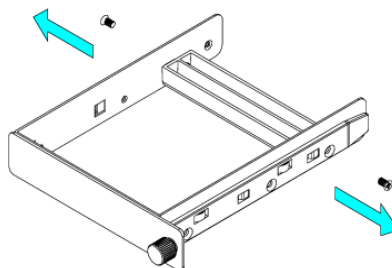
3. Turn the screws on the HDD rack counter-clockwise to loosen it and then pull out the cassettes for the hard drives.



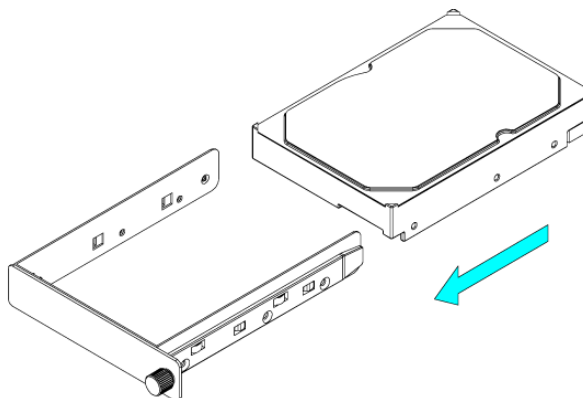


Be careful not to damage any components, and make sure the hard drive is installed correctly.

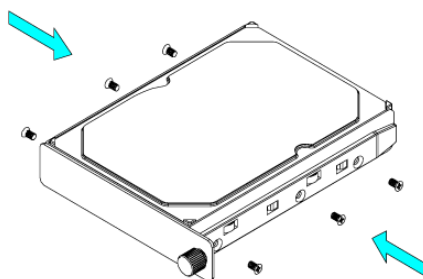
4. Remove the screws that are holding the plastic bracket in place.



5. Install the hard drive as illustrated below with the SATA connector facing away from the front.



6. Mount the drive with the six screws from the side.



7. Repeat the previous 3 steps for each hard drive cassette you are planning to install.

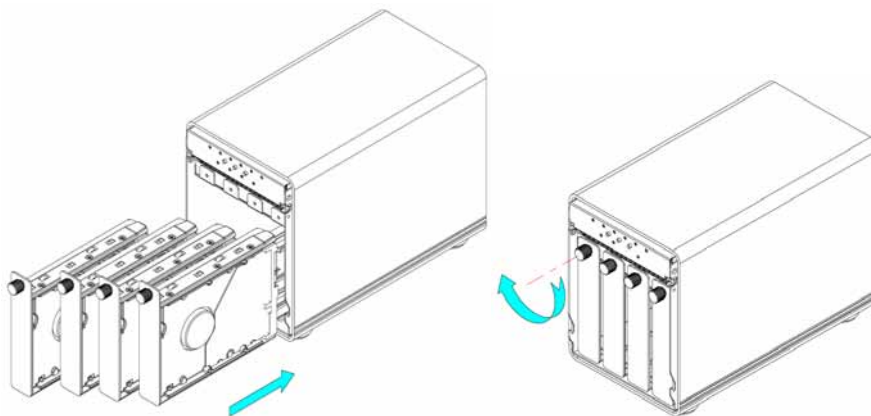


Be careful not to damage any components, and do not force the drives into place. If they don't slide in properly, make sure the drives have been installed in the correct position and that there is nothing out of place.

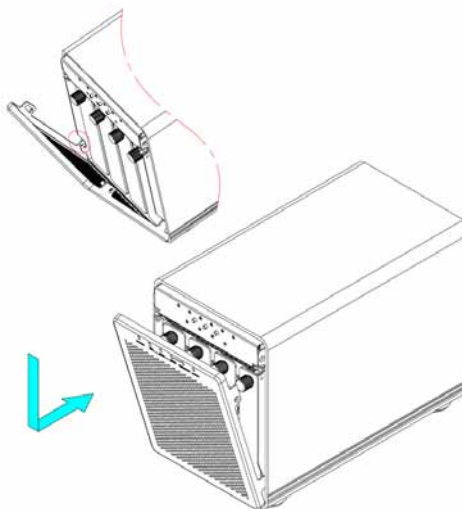


When less than 4 drives are installed, always start from drive A, followed by B and then C, so one hard drive should be installed at position A, two drives at A+B and three drives at A+B+C. If drives are installed in a different position, it will be detected as error.

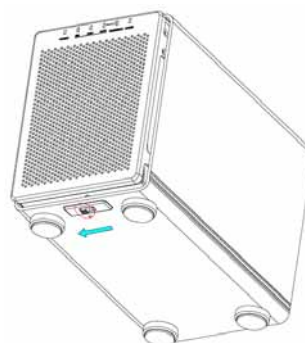
- Slide the hard drive cassettes back into the HDD rack and fasten the screws by turning them clockwise.



- Align the bottom of the front panel with the notch in the chassis and then push it lightly into place.



- Unlock the switch at the bottom of the case and then push the inner chassis back into the housing.





When adding more drives without changing the RAID mode, the hard drives do not have to be re-formatted again.



The device does not have to be turned off when adding or replacing a faulty hard drive.



The data can still be accessed when a drive in the SAFE mode fails but we recommend replacing the faulty HDD immediately to assure continued backup and data safety

Adding more Hard Drives

For the BIG and SAFE mode, it is possible to start with less than 4 drives and install more at a later point.

1. Remove the front panel and install the additional drive(s).
2. Press and hold the CONFIRM button for 3 seconds. The 3 RAID mode LEDs will light up twice at the same time to confirm when the setup mode has been accessed.
3. Release the CONFIRM button.
4. Without changing the RAID mode, press the CONFIRM button again to save the settings.
5. The device will now automatically reset itself and add the new drive(s). Mount the front panel to finish.

Replacing a faulty Hard Drive

When using the SAFE or SAFE II mode, a faulty hard drive can easily be replaced and the data restored automatically.

1. When one of the drives is defective, the ERROR LED will light up red.
2. Remove the front panel and check which of the drives has to be replaced. The corresponding LED from A-D will be blinking red and green to indicate the defective drive, instead of solid green for normal operation.
3. If drive A or C is defective, remove it, connect drive B to slot A or drive D to slot C and install the new one in the empty slot. If drive B or D is defective, replace it with a new HDD. It will automatically start to rebuild the RAID array.
4. The REBUILD LED will light up green and the corresponding HDD LED will light up red and blink green at the same time during the rebuild process.
5. Mount the front panel and let it finish the rebuild process.



Only one interface can be used at any given time.



Always connect the power cord to your device before you plug it into the wall socket.



Changing the RAID setup will require you to re-format the drives. Make sure you backup all data before doing so!



Depending on the RAID mode, only a certain amount of drives can be used.

RAID	HDD
BIG	1-4
FAST	4
SAFE	2 or 4
SAFE II	4

Chapter 3 - System Set Up

Connection to your Computer

A few precautions when using your external storage enclosure:

- Check the cables for visible damage before turning it on
- Do not expose the product to water or humid conditions
- Do not cover the enclosure's ventilation holes

Hard Disk Mode

When using your Hydra and more than one interface cable is connected, the eSATA connection has the priority. To use USB instead, make sure to disconnect the eSATA cable first, before connecting the USB cable.

When only two drives A+B are installed, the Operating System (OS) will show drives C+D with a capacity of 8BG even though there are no drives. This displays the second RAID array C+D but it can be safely ignored.

RAID Setup

To change the RAID mode, remove the front panel to access the CONFIRM and MODE buttons. Keep in mind that when changing the RAID mode, the drives have to be re-formatted, so all data will be lost.

1. Press and hold the CONFIRM button for 3 seconds until the three RAID mode LEDs blink two times.
2. Press the MODE button to select the different RAID modes. It will cycle through BIG/FAST/SAFE/SAFE+FAST(SAFE II).
3. Within 10 seconds after selecting the new mode, press the CONFIRM button to save the setting or otherwise it will revert back to the previous setup.



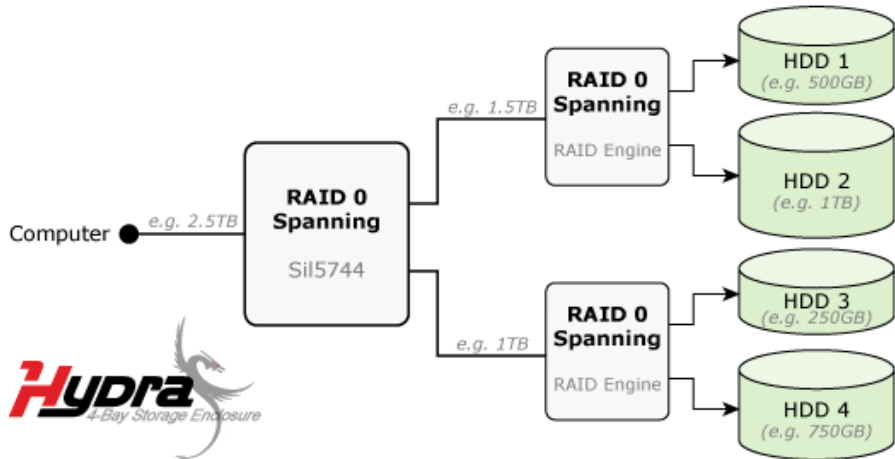
If the total capacity exceeds 2TB and your Operating System does not support single volumes over 2TB, set the 2TB switch to position B and it will automatically split the volumes (A+B / C+D).



For the FAST mode, hard drives of identical capacities are recommended. If different, the total amount of the space that can be used will depend on the drive with the smallest capacity.

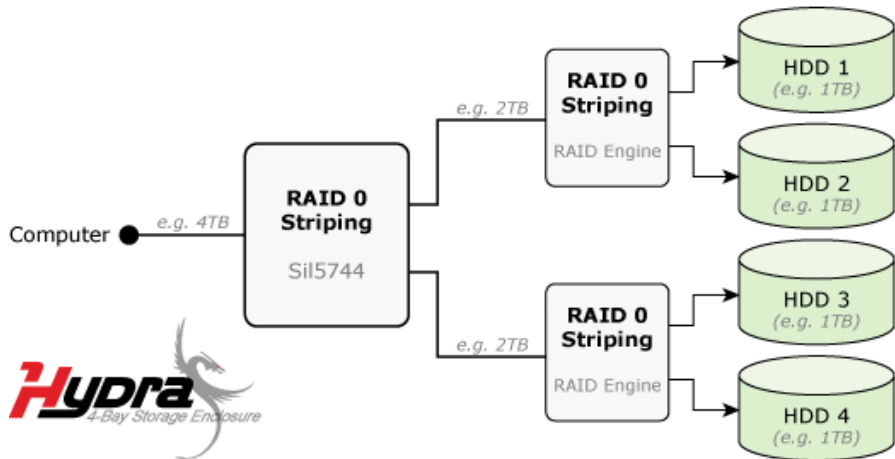
BIG (JBOD spanning)

The drives show up as one large single volume. Spanning is an array (not RAID) that is written sequentially across the drives. By itself, it does not provide any performance or redundancy benefits. Use this if you have installed 1-4 hard drives with different capacities.



FAST (RAID 0 striping+striping)

The drives show up as one large single volume. This mode requires 4 identical drives to implement. Used where speed is the primary objective, RAID Level 0 (also called striping) is not redundant. This form of array splits each piece of data across the drives in segments; since data is written without any form of parity data-checking, it allows for the fastest data transfer of all other modes. However, if one drive becomes damaged, the whole array can become corrupted.





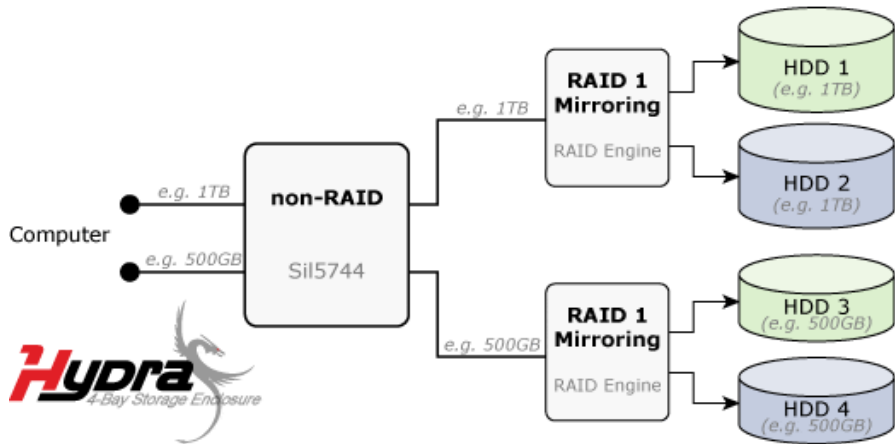
For the SAFE mode, hard drives of identical capacities are recommended. If different, the total amount of the space that can be used will depend on the drive with the smallest capacity.



If the total capacity exceeds 2TB and your Operating System does not support single volumes over 2TB, set the 2TB switch to position B and it will automatically split the volumes (A+B / C+D).

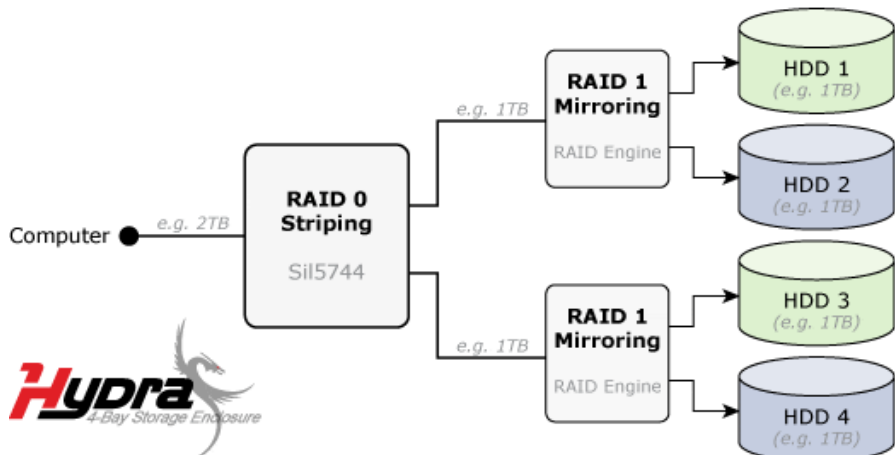
SAFE (RAID 1 mirroring)

The drives show up as two volumes, each representing one set. This mode requires 1 or 2 sets of 2 identical drives to implement. RAID 1 creates an exact copy (or mirror) of a set of data on the second drive. This is useful when reliability and backup are more important than data capacity. The available capacity to the user will be 50% of the total capacity for each set but when one hard drive fails, it can be replaced and the data rebuilt automatically.



SAFE II (RAID 10 mirroring+striping)

The drives show up as one single volume. This mode requires 4 identical drives to implement. RAID 1 creates an exact copy (or mirror) of a set of data. This is useful when reliability and backup are more important than data capacity. The available capacity to the user will only be as large as 50% of the total capacity of all drives combined but when one hard drive fails, it can be replaced and the data rebuilt automatically.





If the system doesn't recognise the drive, turn on the power first, before connecting the interface cable or connect the device before booting your Operating System.

Installation on a PC

Before connecting the device, install the hard drives and set your preferred RAID mode.

If the drives have been pre-installed and setup already, you do not need to change anything, unless you prefer a different setup.

- Turn on your Computer and start Windows.
- Connect the Hydra and turn it on.
- Let Windows search and install the driver automatically.
- Open "My Computer" to see your external hard drive.

Note: For more info about formatting, see "Partitioning & Formatting".

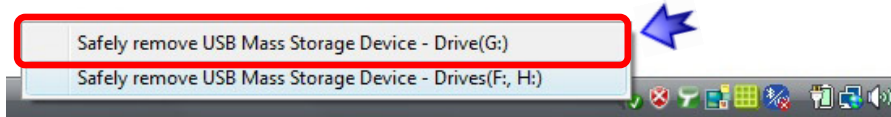
Remove Procedure

For the safe removal of your drive and to assure that no data is lost, always follow the correct unplug procedure. Otherwise, an error message will appear.

- Click on the taskbar icon for external hardware



- Choose your external hard drive and confirm to remove it





If the system doesn't recognise the drive, turn on the power first, before connecting the interface cable or connect the device before booting your Operating System.

Installation on a Macintosh

Before connecting the device, install the hard drives and set your preferred RAID mode.

If the drives have been pre-installed and setup already, you do not need to change anything, unless you prefer a different setup.

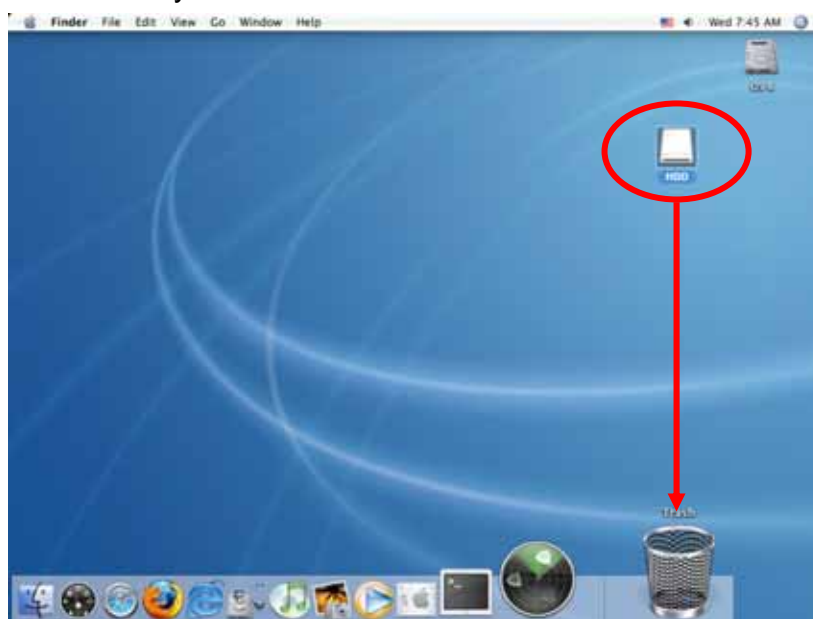
- Turn on your computer and start Mac OS.
- Connect the Hydra and turn it on.
- No driver installation required.
- The external drive will mount and show up on your desktop.

Note: For more info about formatting, see "Partitioning & Formatting".

Remove Procedure

For the safe removal of your drive and to assure that no data is lost, always follow the correct unplug procedure.

- Drag the external hard drive icon into the trash bin
- Turn off your device





If the drive does not appear, make sure the drivers are installed properly and the power is on.



Mac OS can not write to NTFS formatted drives. To use your device on both platforms, we recommend using FAT32.



If the total capacity exceeds 2TB and your Operating System does not support single volumes over 2TB, set the 2TB switch to position B and it will automatically split the volumes (A+B / C+D).

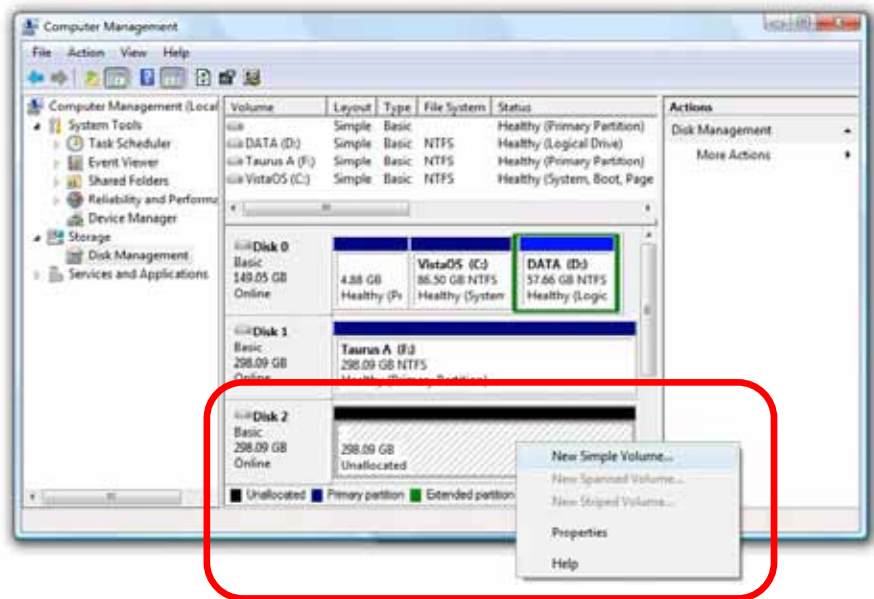
Partitioning & Formatting

Be aware that this will destroy all your existing data on the drive, so make sure you have a backup! This step is usually only required the first time you install a factory new hard drive, if you change the RAID mode or want to erase all data on your drive.

PC running Windows

For Windows, use the disk management program:

- Right click on “My Computer” and choose “Manage”
- Select “Disk Management”
- Choose the drive you want to format and right click on it for further commands (Choose New Partition)
- Follow the Partition Wizard to setup the drive



For Win2000, WinXP and Windows Vista, we recommend formatting the drive using the NTFS file system.

If you are using the FAT32 file system to format the drive on Win2000, WinXP or Windows Vista, the biggest single partition you can create will be 32GB. To create larger partitions, you need to use a 3rd party application or change to NTFS format.



If the drive does not appear on the desktop, make sure there are no extension conflicts and the power is turned on!

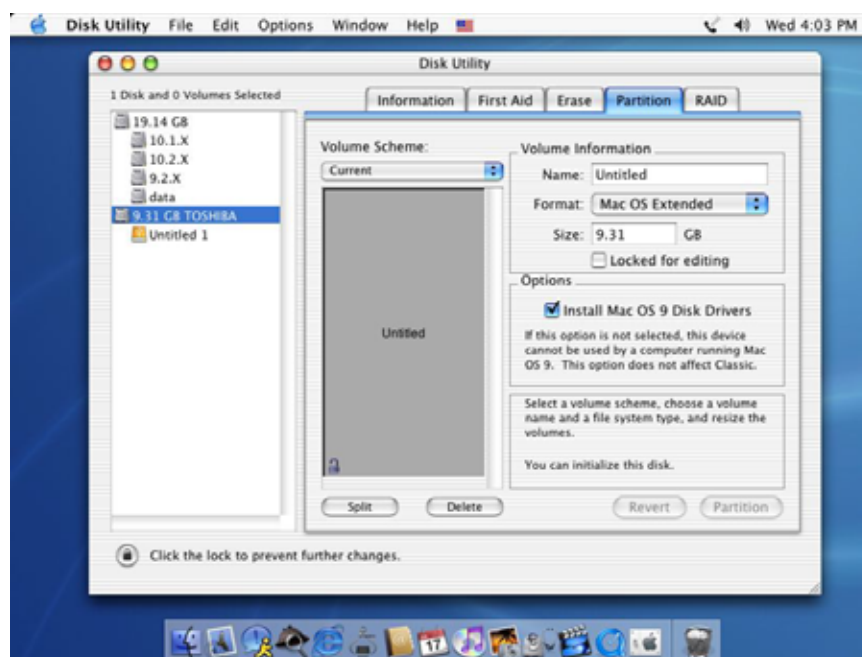


If the total capacity exceeds 2TB and your Operating System does not support single volumes over 2TB, set the 2TB switch to position B and it will automatically split the volumes (A+B / C+D).

Mac OS

For Mac OS X, use the disk utility to format and create partitions on your external disk.

- Select “Disk Utility” in the utilities folder
- Choose your external drive and format it according to your requirements



For Mac OS X, we recommend formatting the drive using the native Mac file system HFS+ also known as Mac OS Extended.

If you want to use your drive on a PC running Microsoft Windows as well as on your Mac, we recommend using the FAT32 file system. On your Mac, select MS-DOS when formatting it. Note: The file size for a single file on FAT32 is limited to 4GB.



Please read your warranty carefully, as this may vary between different vendors!

Chapter 4 - Appendix

Technical Questions

For RMA and other questions, please contact your vendor or check out their online support area!

FAQ

Q: What file system should I choose to format my drive?

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

- Windows 2000/XP/Vista → NTFS
- Mac OS X → HFS+ (Mac OS Extended)
- To use it on both PC and Mac → FAT32

Q: When the 2TB switch is set to B, will it also split volumes smaller than 2TB?

A: No, it will only start to split the volumes once the total capacity has exceeded 2TB.

About this Manual

Firmware, images and descriptions may slightly vary between this manual and the actual product you have.

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