

Tech Notes

Gigabyte RAID

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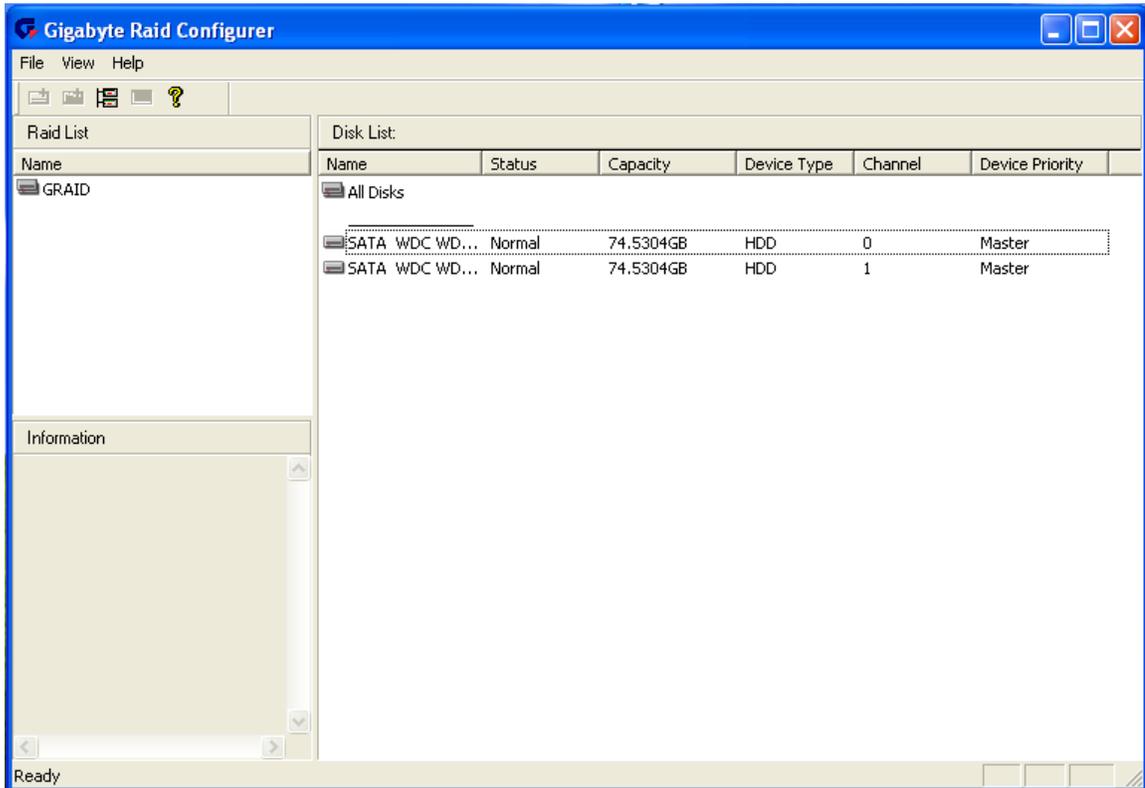
Purpose: To increase familiarity with the Gigabyte RAID systems in both Windows Based and DOS based software, including the correct method for rebuilding arrays, correcting drive errors, and additional RAID 1 concepts.

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1) Gigabyte Windows Based Software – Gigabyte includes a Windows based application that serves more in the capacity of a monitor rather than a usable utility. To access the application, you must click the (G) icon in the System Bar in the lower right corner of the screen.

- The picture below highlights the normal state of the drive array. There are no modifications able to be made, and there are no options other than to exit.



- The picture above changes only slightly when a drive is being rebuilt. The status bar at the bottom of the window changes from “Ready” to a progress bar that indicates percentage complete. The only time that this process will initiate is if the software detects a need. It cannot be started manually.

2) Gigabyte BIOS Based Software –To access the console you must reboot the system, and when prompted you will need to press **Ctrl-G** to access this menu. The prompt is brief and will require strict attention to the boot process. You can enter this key combination multiple times beginning when you see the text appearing on the monitor.

Because of the nature of the BIOS software, we cannot capture screen shots so we have described the screens. Please note that the simple representations are not to be taken as authoritative representations of what you will see on your system. Also please note that the mouse will not yet be loaded, and all commands are keyboard based, some

of these keyboard commands may not be consistent with your intuition, so please be certain to look at the key guide at the bottom of each new screen.

After pressing **Ctrl-G** you will have the following six options:

1. Create RAID
2. Delete RAID
3. Revert to Disk Drives
4. Solve Mirror Conflict
5. Rebuild Mirror Drive
6. Save and Exit
7. Exit Without Saving

You will notice that, where the Windows is based on the concept of monitoring the array, the BIOS software is focused on performing actions on the array. `Create RAID` will display drives that are currently available for array creation. `Delete Array` will allow you to remove any ties between drives in an array. `Revert to Disk Drivers` performs a similar task, but no data will be lost. `Solve Mirror Conflicts` will only be an usable option if the drives are not congruent. `Rebuild Mirror Drive` is only available when necessary.

3) Rebuilding an Array in Windows – This function is only preformed automatically in Windows. The Gigabyte software included has no option of this sort.

4) Rebuilding an Array in BIOS – Following is a step-by-step procedure for rebuilding your array.

- Step 1: When your computer reboots be prepared and enter Ctrl-G when prompted (hold down the Ctrl key and press G at the same time.)
- Step 2: Select Rebuild Mirror Drive from the BIOS menu (usually number 5).
- Step 3: Select the array to rebuild (it will most likely be the only array). The process can take 30 minutes or more, and you will not have any choices if all is in working order.
- Step 4: Allow the array to complete the rebuild process and reboot the computer. You should no longer receive a critical error notation.

5) Remounting and Replacing a Drive in the Direct Link Enclosure – If you have persistent difficulties with a drive, you may need to replace the physical drive. This requires only a small level of technical experience, a Philips (Crosshead) screwdriver, and a replacement drive. There are two types of drives available on the market, the SuperSwap 1000 normally accepts an IDE drive (rear view shown below), however, there are some editions known to have SATA interfaces. Your drive must have the same connectors. It is generally considered best to have an identical drive, but any drive equal in size or larger should work. **If you use a drive that already has data, there is a potential for complete data loss on your EnvidasFW system, only use a brand**

new, unused drive (in most cases, it is not recommended to insert a drive from another machine using Direct Link, as noted this could result in a severe loss of data).

Note: You may also use these instructions to re-secure a drive that you suspect has a loose connection. *DR DAS highly recommends verifying the connection with this method prior to installing a new drive.* Using canned air, you may also blow components with gentle bursts to dislodge dust buildup that may be preventing a firm connection.

Step 1: Unlock the chassis, and remove the enclosure carefully.

Step 2: You will need to unscrew the sides of the drive (at the top) and slide off the top of the enclosure.

Step 3: You will need to remove four Philips screws that hold the drive in place, two on each side.

Step 4: Remove the drive from the enclosure gently. Now you will be able to identify the type of drive by looking at its connectors.



IDE Drive



SATA Drive

Step 5: When you have located a replacement drive, insert into the enclosure and fix in place with screws.

Step 6: Replace top, make sure that the hole in the top lines up with the latch on the enclosure and locks into place.

Step 7: Gently insert enclosure until firmly in place and lock the drive.

Step 8: If using the identical model number, you must rebuild the array in the BIOS as noted above. If you have a different drive, you must enter the BIOS, define an array consisting of the two drives now installed, and allow it to build itself.

7) Additional Notes

- Please remember that a drive will most likely not be “bad” if the array becomes critical, rather it was interrupted during data entry (by a power outage, power surge, or any number of other acts that would interrupt the data writing process).

- In a case like this, a fair majority of cases, a rebuild is all that is necessary to get the array “back on track.” If, after a rebuild is attempted, the array still reports a critical status, please contact DR DAS for further support.
- If there is an instance where Windows is damaged along with the array, a reinstallation of all software may be necessary. The reinstallation of windows requires two 3.5” boot disks (images of which is also available on the FTP site). After you insert the Windows setup CD and as you begin the setup process, you will need to pay close attention for Windows Setup to ask you to indicate that you have additional RAID drivers by pressing F6. This note will appear at the bottom of the screen. Windows will prompt you to insert the disk, and the rest of the process so should go as normal.