Intel® Matrix RAID Technology

Quick Start Guide — March 2004, Rev 3.0

Purpose

Provide necessary steps to build a system with both a RAID 1 and a RAID 0 volume on two SATA hard drives using Intel Matrix RAID Technology

Background

Intel Matrix RAID Technology is feature of the Intel® Matrix Storage Technology product. To enable Intel Matrix technology, a first RAID volume needs to be created that is less than the combined size of the two hard drives assuming they are the same size. If one hard drive is smaller than the other, the size needs to be less than twice the size if the smaller hard drive. This will leave unused space on the two hard drives that can be used to create a second RAID volume. Intel Matrix RAID Technology is the advanced ability for two RAID volumes to share the combined space of two hard drives being used in unison.

Setting Up a System with an Intel Matrix RAID Technology Configuration

The following steps outline how to build a RAID 1 & RAID 0 system with Microsoft* Windows* XP installed using two SATA hard drives.

1. Assemble the system using a motherboard that supports Intel Matrix Storage Technology and attach two SATA hard drives.
2. Enter System BIOS Setup; ensure that Intel Matrix Storage Technology is enabled. This setting may be different for each motherboard manufacturer. Consult your user manual if necessary. When done, exit Setup.
3. Upon re-boot you will see the Intel® Application Accelerator RAID Option ROM status message on the screen; press CTRL-I to enter the Option ROM User Interface. Within this UI select option #1 'Create RAID Volume'.
4. In the Create Volume Menu; enter the volume name you would like to use and press enter.
5. Use the arrow keys to select RAID 1, press enter again.
6. Press enter again, and then select the hard drives to be used by the RAID volume by pressing the space bar; press enter when done. You won't need to complete this step if there are only two hard drives in the system. If this is the case, you will move to the next step when you hit enter the first time.
7. You should now be at the point where you are being asked to enter the size of the volume. The maximum (default) should be shown in gigabytes (GB). This size would be used if only one volume was to be created. But, since you want to create two volumes, this size needs to be reduced. Type in a new size for the first volume now. Press enter when done. As an example: if you want the first volume to span the first half of the two disks, re-type the size to be half of what is shown by default. The second volume, when created, will automatically span the remainder of the two hard drives.
8. Press enter again to create the volume, press 'Y' to confirm.
9. Exit the Option ROM User Interface by selecting #4 in the main menu and 'Y' to confirm.
10. Begin Windows XP Setup by booting from the installation CD.
11. At the beginning of Windows XP Setup, press F6 to install a third-party SCSI or RAID driver. When prompted, insert a floppy disk containing the Intel® Application Accelerator 4.0 driver. After reading the floppy disk, the 'Intel® 82801FR SATA RAID Controller' will be presented; select this driver to install.
12. Finish the Windows XP installation onto the RAID 1 volume and install all necessary drivers.
13. Install the latest Intel Application Accelerator software via the CD-ROM included with your motherboard or after downloading it from the Internet. This will add the Intel® Storage Utility which can be used to manage the RAID configuration.
14. Now, run the Intel® Storage Utility from the following link in the Start Menu:
    Start → Programs → Intel(R) Application Accelerator → Intel Application Accelerator
15. In the main dialog, Select 'Create RAID Volume from Existing Hard Drive' in the Actions menu. This will launch the Create RAID Volume from Existing Hard Drive Wizard. Follow the instructions to create a RAID 0 volume on the remaining space on the two hard drives. The size will be selected automatically.

Now use Microsoft Windows XP Disk Management to partition and format the RAID 0 Volume which will appear as a new physical hard drive. Once this is complete you may then use the RAID 0 volume as a high performance data storage area or use it as a place to install high performance applications.