



# ***CONFIGURING SATA DRIVES AS RAID LOGICAL DRIVES WITH A BOOTABLE PARTITION***

Version 1.2

## Create a Bootable Logical Drive

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### *Description*

A logical drive appears to the computer as a single hard disk drive. As a result, you can install your operating system onto a logical drive and boot your computer from the logical drive. The following steps describe how to create a bootable logical drive.

### *Create a Logical Drive*

You will now use the onboard FastBuild BIOS utility to create a logical drive.

1. Boot your system. If this is the first time you have booted with the disk drives installed, the ATI onboard BIOS will display the following screen (below).

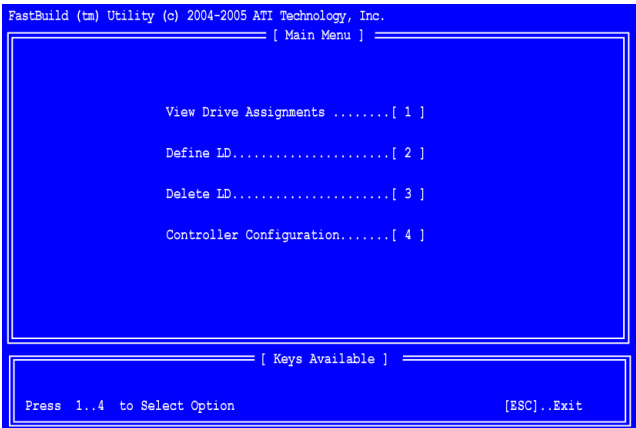


```
AHCI (tm) BIOS Version 2.5.1540.12
(c) 2004-2005 ATI Technology, Inc. All rights reserved.

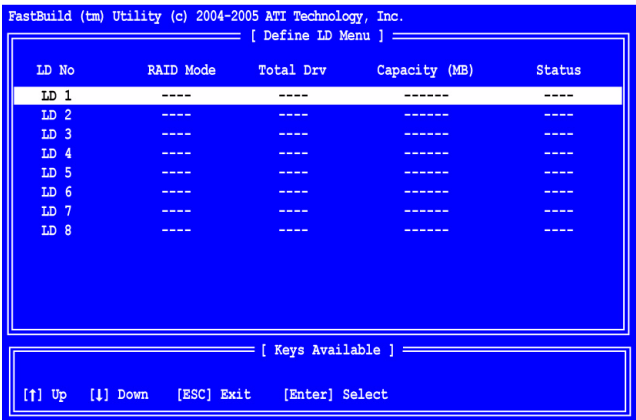
No Array is defined...

Press <Ctrl-F> to enter FastBuild (tm) Utility...
```

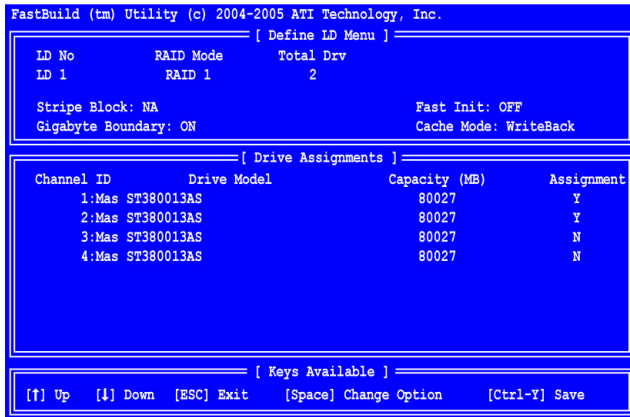
2. Press the **Ctrl-F** keys to display the FastBuild Utility Main Menu (below).



3. Press **2** on the Main Menu screen to display the Define LD Menu (below).



4. Press the arrow keys to highlight a logical drive number you want to define and press **Enter** to select it.
- The Define LD Menu for the logical drive number you selected will next appear (below).



5. Choose the RAID Level you want. In the Define LD Menu section, press the Spacebar to cycle through logical drive types:
- RAID 0 (Stripe)
  - RAID 1 (Mirror)
  - RAID 10 (Stripe / Mirror)



#### Note

While you can use any available RAID Level for your bootable logical drive, ATI recommends RAID 1 for most applications.

6. Press the arrow keys to move to the next option. Option choices depend on the RAID Level you selected.
- Initialize logical drive, zero the disk drives. RAID 1 or 10 only.
  - Stripe Block Size, the default 64KB is best for most applications. RAID 0 or 10 only.
  - Gigabyte Boundary, allows use of slightly smaller replacement drives.
  - Cache Mode, WriteThru or WriteBack.
7. Press the arrow keys to move to Disk Assignments. Press the spacebar to toggle between N and Y for each available drive. Y means this disk drive will be assigned to the logical drive.
- Assign the appropriate number of disk drives to your logical drive.
8. Press **Ctrl-Y** to save your logical drive configuration.

You have the option of using all of the disk drive capacity for one logical drive or allocating a portion to a second logical drive.

Press Ctrl-Y to Modify Array Capacity or press any other key to use maximum capacity...

Choose one of the following actions:

- Use the full capacity of the disk drives for a single logical drive. Go to “One Logical Drive” below.
- Split the disk drives among two logical drives. Go to “Two Logical Drives” below.

## One Logical Drive

Continued from *Create a Logical Drive* step 8, above.

1. Press any key (except for **Ctrl-Y**) to use the full portion of the logical drive for one logical drive.
2. Press **Esc** to exit to the Main Menu. Press **Esc** again to exit the Utility.
3. Press **Y** to restart the computer.

You have successfully created a new RAID logical drive. Go to “Install the Operating System” on page 7.

## Two Logical Drives

Continued from *Create Logical Drive* step 8, above.

1. Press **Ctrl-Y** to allocate a portion of the disk drives to the first logical drive.

FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.

[ Define LD Menu ]

LD No	RAID Mode	Total Drv
LD 1	RAID 1	2

Stripe Block: NA      Fast Init: OFF  
Gigabyte Boundary: ON      Cache Mode: WriteBack

[ Drive Assignments ]

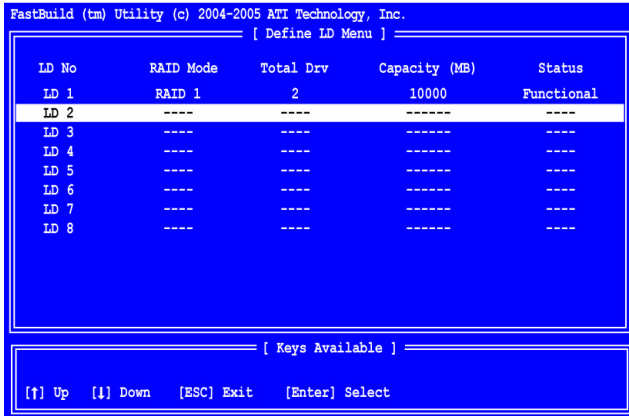
Channel ID	Drive Model	Capacity (MB)	Assignment
1:Mas	ST380013AS	80027	Y
2:Mas	ST380013AS	80027	Y
3:Mas	S		N
4:Mas	S		N

Enter array capacity (in MB) here: 100000

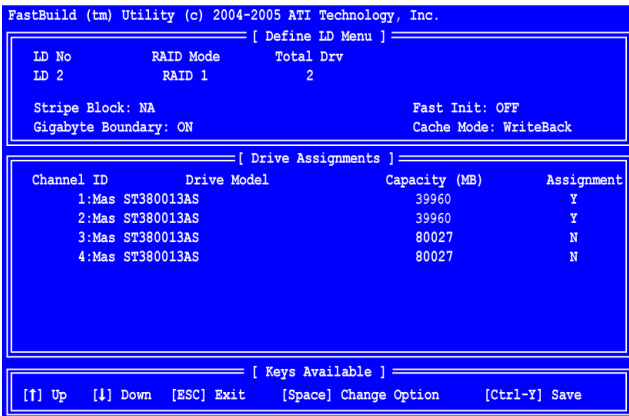
[ Keys Available ]

[↑] Up   [↓] Down   [ESC] Exit   [Space] Change Option   [Ctrl-Y] Save

2. Enter the desired capacity in MB for the first logical drive and press **Enter**. The Define LD Menu displays again.



- Press the up and down arrow keys to select an available logical drive number and press **Enter**.



- Choose the RAID level and options for the second logical drive.  
Note that the disk drives in Channels 1 and 2 reflect smaller capacities because a portion of their capacity belongs the first logical drive.  
In this example the disk drives in Channels 3 and 4 are not assigned to a logical drive.
- Press **Ctrl-Y** to save your logical drive configuration.
- Press **Esc** to exit to the Main Menu. Press **Esc** again to exit the Utility.
- Press **Y** to restart the computer.

You have successfully created a new RAID logical drive. Go to “Install the Operating System” on page 7.

## Install the Operating System



### Important

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When you boot your PC for OS installation, access your BIOS settings. Go to South Bridge Chipset Configuration and check the OnChip SATA Type. Set the OnChip SATA Type to **RAID**.

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### Windows Vista

1. Start the installation: Boot from the DVD-ROM.
2. When the “Where do you want to install Windows?” dialog box appears, click **Load Driver**.
3. Insert the ATI driver diskette into drive A: or attach a USB memory stick with the the ATI driver to the USB port.
4. In the Load Driver dialog box, click the **Browse** button.
5. In the Browse for Folder dialog box, click the diskette or USB stick, then click the **OK** button.
6. In the “Select the driver to be installed” dialog box, highlight *ATI AHCI Compatible RAID Controller*, then click the **Next** button.
7. When the “Where do you want to install Windows?” dialog box appears again, in the list of Disks, highlight the Disk representing your logical drive (the Disk with unallocated space), then click the **Next** button.
8. Continue the Windows installation.

### Windows Server 2003

1. Start the installation: Boot from the CD-ROM. Press F6 after the message “Press F6 if you need to install third party SCSI or RAID driver” appears.
2. When the Windows Setup window is generated, press S to specify an Additional Device(s)
3. Insert the ATI driver diskette into drive A: and press Enter.
4. Press S to use the driver on the floppy disk and then press Enter to continue with installation.
5. The Windows 2003 Setup screen will appear again saying “Setup will load support for the following mass storage devices:” The list will include *ATI Controller*.  
**Note:** If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to the next step.
6. From the Windows Setup screen, press the Enter. Setup will now load all device files and then continue the Windows installation.

## Windows XP

1. Start the installation: Boot from the CD-ROM. Press F6 after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.
2. When the Windows Setup window is generated, press S to specify an Additional Device(s).
3. Insert the ATI driver diskette into drive A: and press Enter.
4. Press S to use the driver on the floppy disk and then press Enter to continue with installation.
5. The Windows XP Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include *ATI Controller*.

**Note:** If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to the next step.

6. From the Windows Setup screen, press the Enter. Setup will now load all device files and then continue the Windows XP installation.

## RedHat Linux EL 4.0

1. Insert the Red Hat Installation CD into your CD-ROM drive.
2. At the *Welcome to Red Hat Linux...* installation screen, a prompt labeled boot: will appear at the bottom of the screen. Type **linux dd** and press Enter.
3. When the Installer asks, *Do you have a driver disk?* click Yes.
4. When the Installer asks for a Driver Disk Source, highlight *fd0* and click OK.
5. At the *Insert your driver disk and press OK to continue*, insert the driver diskette into the floppy drive and click OK.
6. When the Installer asks for more driver disks, respond appropriately. Continue with the installation normally.

## SuSE Linux ES 9.0

1. Insert the SuSE Installation CD into your CD-ROM drive.
2. When the boot: picture prompts for an installation option, choose *Installation*.
3. Press the F6 key and insert the driver diskette into the floppy drive.
4. In the Driver Update Medium selection box, choose *fd0* and click OK.
5. When the Driver Update Medium selection box appears again, click Back to continue.
6. Finish the installation normally.



## ***Set the Boot Order***

You might need to use this procedure if your PC has a disk drive with the operating system on it in addition to the logical drive you created above.

To set the boot order:

1. When you first boot your computer, press the **Del** key to enter the BIOS setup utility.  
The setup utility opens with the main window.
2. Press the right arrow key to select the *Boot* menu then press **Enter**.
3. Press the down arrow key to highlight *Boot Device Priority* and press **Enter**.  
All bootable drives on your system will appear along with their position in the boot order.
4. If you want to boot your computer from the logical drive, be sure the logical drive comes before any other fixed drives (such as an IDE drive) in the boot priority.  
See your motherboard BIOS manual for more information.