ATI RAID Installation Guide

1. ATI BIOS RAID Installation Guide

ATI BIOS RAID Installation Guide is an instruction for you to configure RAID functions by using the onboard FastBuild BIOS utility under BIOS environment. After you make a SATA / SATAII driver diskette, press <F2> to enter BIOS setup to set the option to RAID mode by following the detailed instruction of the "User Manual" in our support CD or "Quick Installation Guide", then you can start to use the onboard FastBuild BIOS utility to configure RAID.

1.1 Introduction to RAID

The term "RAID" stands for "Redundant Array of Independent Disks", which is a method combining two or more hard disk drives into one logical unit. For optimal performance, please install identical drives of the same model and capacity when creating a RAID set.

RAID 0 (Data Striping)

RAID 0 is called data striping that optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. It will improve data access and storage since it will double the data transfer rate of a single disk alone while the two hard disks perform the same work as a single drive but at a sustained data transfer rate.

WARNING!!

Although RAID 0 function can improve the access performance, it does not provide any fault tolerance. Hot-Plug any HDDs of the RAID 0 Disk will cause data damage or data loss.

RAID 1 (Data Mirroring)

RAID 1 is called data mirroring that copies and maintains an identical image of data from one drive to a second drive. It provides data protection and increases fault tolerance to the entire system since the disk array management software will direct all applications to the surviving drive as it contains a complete copy of the data in the other drive if one drive fails.

RAID 10 (Stripe Mirroring)

RAID 0 drives can be mirrored using RAID 1 techniques, resulting in a RAID 10 solution for improved performance plus resiliency. The controller combines the performance of data striping (RAID 0) and the fault tolerance of disk mirroring (RAID 1). Data is striped across multiple drives and duplicated on another set of drives.

1.2   RAID Configurations Precautions

1.   Please use two new drives if you are creating a RAID 0 (striping) array for performance. It is recommended to use two SATA drives of the same size. If you use two drives of different sizes, the smaller capacity hard disk will be the base storage size for each drive. For example, if one hard disk has an 80GB storage

capacity and the other hard disk has 60GB, the maximum storage capacity for the 80GB-drive becomes 60GB, and the total storage capacity for this RAID 0 set is 120GB.
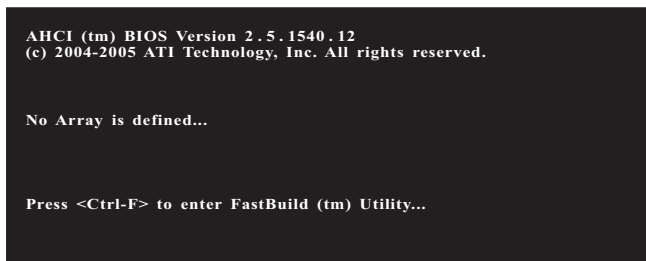
2.   You may use two new drives, or use an existing drive and a new drive to create a RAID 1 (mirroring) array for data protection (the new drive must be of the same size or larger than the existing drive). If you use two drives of different sizes, the smaller capacity hard disk will be the base storage size. For example, if one hard disk has an 80GB storage capacity and the other hard disk has 60GB, the maximum storage capacity for the RAID 1 set is 60GB.

3.   Please verify the status of your hard disks before you set up your new RAID array.
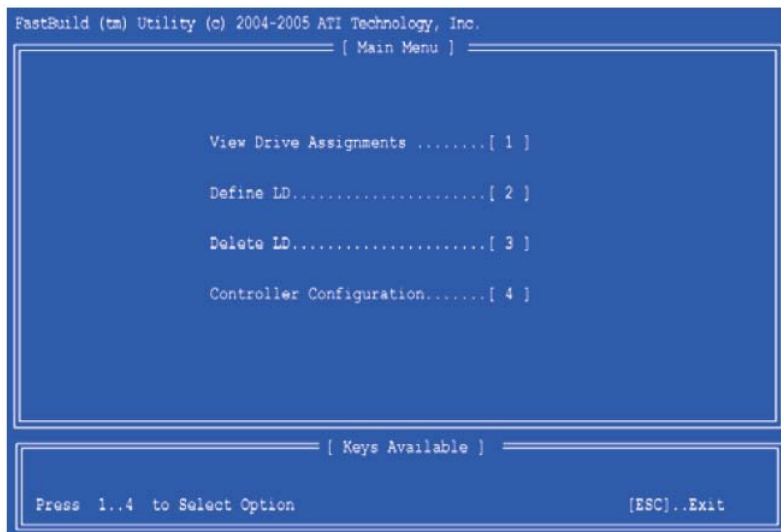
WARNING!!

Please backup your data first before you create RAID functions. In the process you create RAID, the system will ask if you want to "Clear Disk Data" or not. It is recommended to select "Yes", and then your future data building will operate under a clean environment.
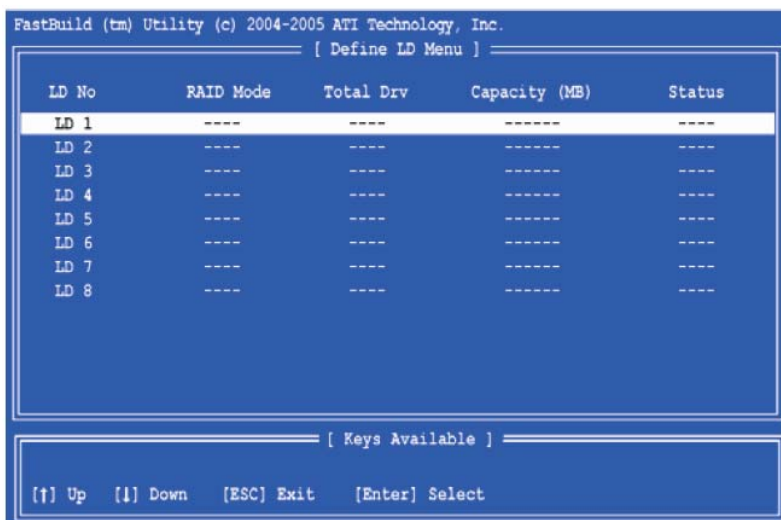
1.3   Create Disk Array

Power on 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.

```
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...
```

Press <Ctrl+F> keys, then the FastBuild Utility Main Menu appears.

```
FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.
========================== [ Main Menu ] ==========================



               View Drive Assignments ........[ 1 ]

               Define LD.....................[ 2 ]

               Delete LD.....................[ 3 ]

               Controller Configuration.......[ 4 ]




========================== [ Keys Available ] =====================

Press  1..4  to Select Option                        [ESC]..Exit
```

Press 2 on the Main Menu screen to display the Define LD Menu.

```
FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.
========================= [ Define LD Menu ] ======================

   LD No        RAID Mode     Total Drv    Capacity (MB)     Status
   LD 1          ----          ----         ------           ----
   LD 2          ----          ----         ------           ----
   LD 3          ----          ----         ------           ----
   LD 4          ----          ----         ------           ----
   LD 5          ----          ----         ------           ----
   LD 6          ----          ----         ------           ----
   LD 7          ----          ----         ------           ----
   LD 8          ----          ----         ------           ----




========================== [ Keys Available ] =====================

[↑] Up   [↓] Down   [ESC] Exit    [Enter] Select
```

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.

```
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 ST380013AS                    80027               N
        4:Mas ST380013AS                    80027               N




======================= [ Keys Available ] =======================
  [↑] Up    [↓] Down   [ESC] Exit    [Space] Change Option    [Ctrl-Y] Save
```

Choose the RAID level you want. In the Define LD Menu section, press the spacebar to cycle through logical drive types, including RAID 0, RAID 1, and RAID 10.

WARNING!!

While you are allowed to use any available RAID level for your bootable logical drive, it is recommended to use RAID 1 for most applications.

Press the arrow key 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. Then 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:

1. **Use the full capacity of the disk drives for a single logical drive**: Please read "One Logical Drive" below.
2. **Split the disk drives among two logical drives**: Please read "Two Logical Drives" below.

One Logical Drive

After selecting the logical drive in Disk Assignments as the above-mentioned procedures, press any key (except for <Ctrl-Y>) to use the full portion of the logical drive for one logical drive. Then please follow the steps below:
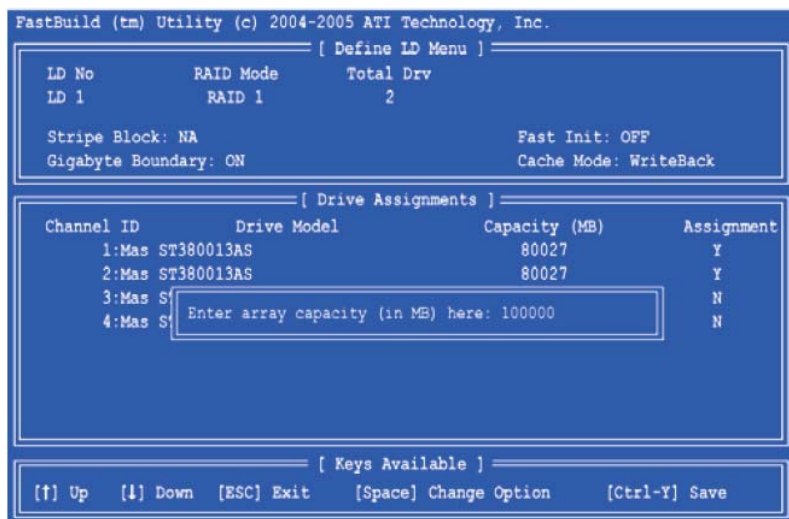
1. Press <Esc> to exit to the Main Menu.

2. Press <Esc> again to exit the Utility.
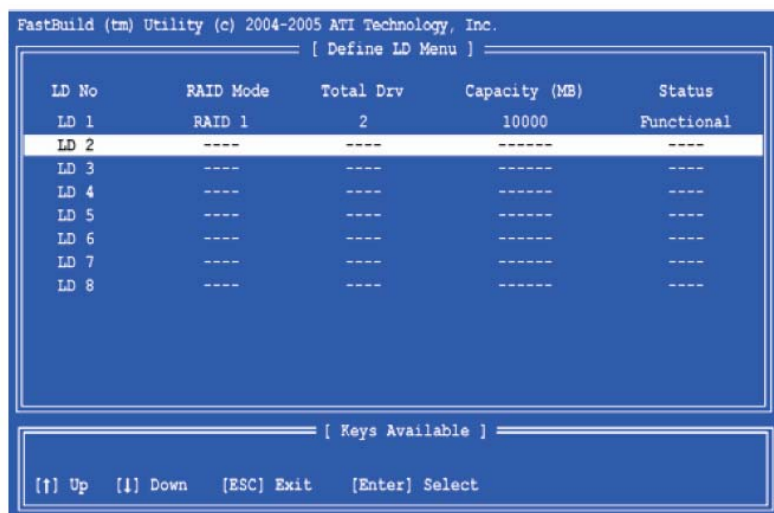
3. Press <Y> to restart your computer.

You have successfully created a new RAID logical drive. Please install the operating system to your computer by following the detailed instruction of the "User Manual" in our support CD or "Quick Installation Guide".

Two Logical Drives

After selecting the logical drive in Disk Assignments as the above-mentioned procedures, press <Ctrl-Y> to allocate a portion of the disk drives to the first logical drive. Then please follow the steps below.

```
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│ Enter array capacity (in MB) here: 100000 │         N
             └─────────────────────────────────────────┘


  ========================= [ Keys Available ] =========================
  [↑] Up    [↓] Down    [ESC] Exit     [Space] Change Option     [Ctrl-Y] Save
```

1. Enter the desired capacity (MB) for the first logical drive and press <Enter>. The Define LD Menu displays again.

```
FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.
======================== [ Define LD Menu ] ========================

  LD No          RAID Mode       Total Drv       Capacity (MB)       Status
  LD 1            RAID 1              2               10000          Functional
  LD 2            ----              ----            ------            ----
  LD 3            ----              ----            ------            ----
  LD 4            ----              ----            ------            ----
  LD 5            ----              ----            ------            ----
  LD 6            ----              ----            ------            ----
  LD 7            ----              ----            ------            ----
  LD 8            ----              ----            ------            ----



  ========================= [ Keys Available ] =========================

  [↑] Up    [↓] Down    [ESC] Exit     [Enter] Select
```

6

2.   Press the up and down arrow keys to select an available logical drive number and press <Enter>.

```
FastBuild (tm) Utility (c) 2004-2005 ATI Technology, Inc.
=============================[ Define LD Menu ]=============================
   LD No          RAID Mode      Total Drv
   LD 2             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                      39960               Y
       2:Mas ST380013AS                      39960               Y
       3:Mas ST380013AS                      80027               N
       4:Mas ST380013AS                      80027               N




=============================[ Keys Available ]=============================
 [↑] Up   [↓] Down   [ESC] Exit    [Space] Change Option     [Ctrl-Y] Save
```

3.   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 to the first logical drive. In this example the disk drives in Channels 3 and 4 are not assigned to a logical drive.

4.   Press <Ctrl-Y> to save your logical drive configuration.

5.   Press <Esc> to exit to the Main Menu. Press <Esc> again to exit the Utility.

6.   Press <Y> to restart the computer.

You have successfully created a new RAID logical drive. Please install the operating system to your computer by following the detailed instruction of the "User Manual" in our support CD or "Quick Installation Guide".

2.   ATI Windows RAID Installation Guide

ATI Windows RAID Installation Guide is an instruction for you to configure RAID functions by using WebPAM RAID management software under Windows environment. The WebPAM (Web-Based Promise Array Management) software offers local and remote management and monitoring of all ATI SB600 SATA logical drives that exist anywhere on a network. Its browser-based GUI provides email notification of all major events/alarms, memory cache management, drive event logging, logical drive maintenance, rebuild, and access to all components in the RAID configuration (server, controller, logical drives, physical drives, and enclosure). WebPAM is designed to work with ATI SB600 SATA RAID controllers. Other brands of RAID controllers are not supported. Please read this guide carefully and follow the instructions below to configure and manage RAID functions.

2.1   Components of WebPAM Installation Software

WebPAM installation software will install two major components to your system:

1.   WebPAM RAID management software: The WebPAM software installs on the PC with the ATI SB600 SATA RAID Controller (the "Host PC").

2.   Java Runtime Environment (in a private folder): The WebPAM installation program installs a private JRE in folder _jvm under the same directory where WebPAM is installed. WebPAM uses this private JRE to avoid incompatibility issues with any other JREs that may be present on your system.

2.2   Browser Support

On the Host PC with the ATI SB600 Controller, where you install WebPAM, you must have one of the following browsers: Internet Explorer 6.0, Mozilla Suite 1.7, Mozilla Firefox 1.0, or Netscape Navigator 7.1.

If you do not have one of the above browsers, install the browser first and make it the default browser. Then install WebPAM. You must use one of the browsers listed above on your networked PC in order to access WebPAM over the network.

2.3   Installing WebPAM

Follow these steps to install WebPAM on your Windows-based PC or Server.

1. Boot up the PC/server and launch Windows. If the computer is already running, exit all programs.

2. Insert the software CD into your CD-ROM drive.

3. Double-click on the Install CD's icon to open it.

WebPAM_20

4. Double-click on the Installer icon to launch it.   The first WebPAM installation dialog box appears.

5. Follow the prompts in the installation dialog box. The first WebPAM installation dialog box appears as shown below.
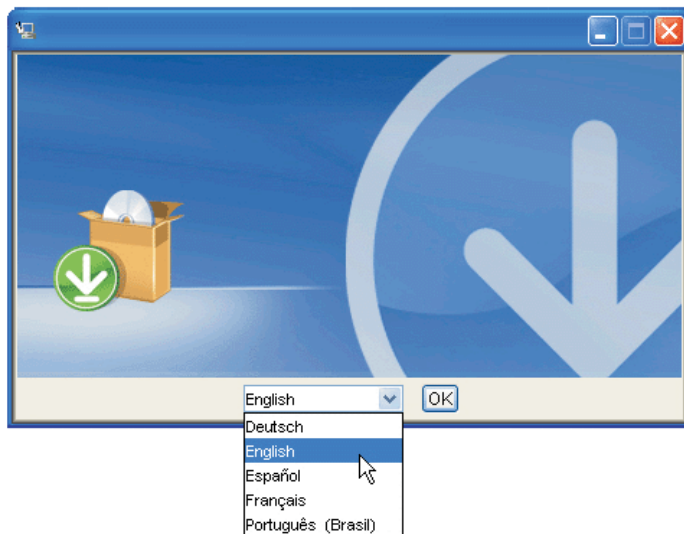

6. Select an installer language from the dropdown menu and click the OK button.

7. Click the Next button when the Introduction screen appears.

8. Click on the "I accept the terms of the license agreement" option to proceed with installation when the License

   agreement screen appears. If you select the "I do not accept the terms of the license" option, the installation will quit.

   Click the Next button when you are finished.
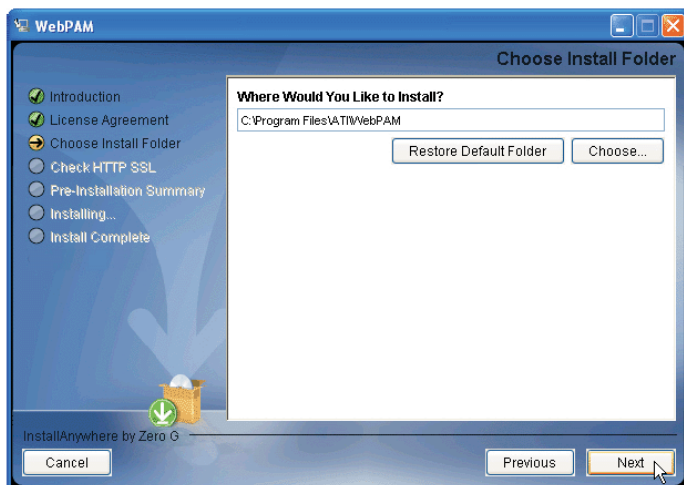
9. When the Choose Install Folder screen appears, select a folder for the WebPAM applications you are installing. For

   example, the Windows default folder is C:\Program Files\ATI\WebPAM. If you want a different folder, type its

   location or click the Choose... button and select a new location. If you change your mind and want the default

   location, click on the Previous button, then the Next button. Click the Next button when you are finished.
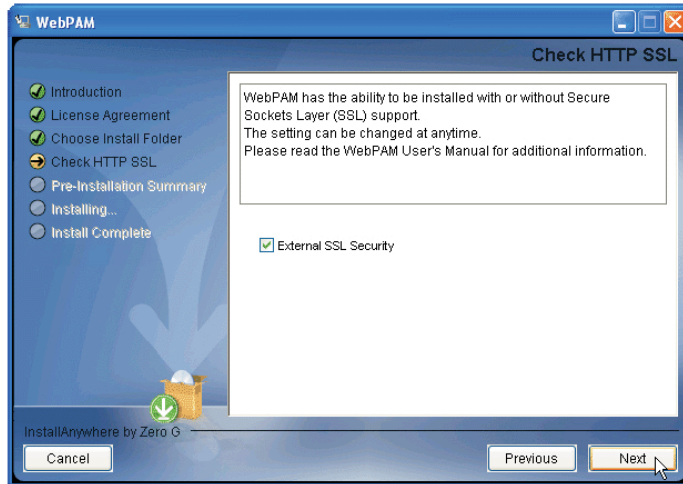
10. When the Check HTTP SSL screen appears, you can choose External Security. An explanation follows. External

SSL Security – Applies security to all connections involving the Internet or outside your company firewall. Security

options are invisible to authorized users. ATI provides a default certificate for the server as well as for internal data

communication. However, in some cases it is always better to install and verify your own certificate for the

webserver. And, and if possible, verify certificate by certificate authority like Verisign or Thwate. See your MIS

Administrator for guidance. Click the Next button when you have made your choice.
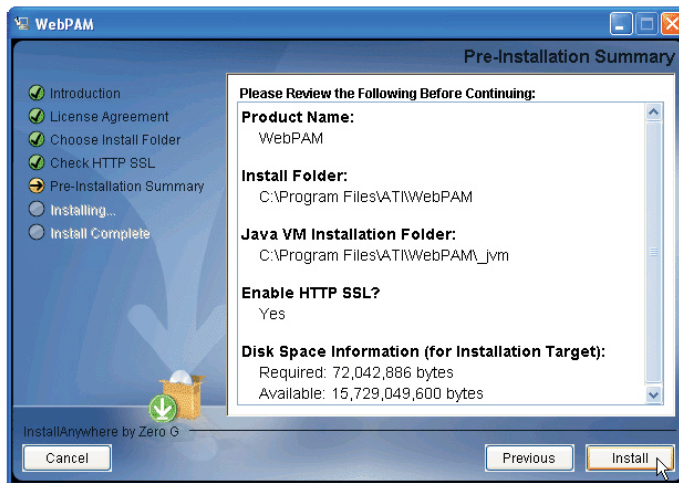
11. Review your choices when the Pre-Installation Summary screen appears. Click the Previous button to make

changes or click the Installation button to continue.

12. When the Install Complete screen appears, click the Done button. This completes the WebPAM installation. Then

you can start to log-in to WebPAM. Please read the instruction below for details.

2.4 Log-in to WebPAM

Double-click on the WebPAM icon on your Windows desktop. **WebPAM** Or you may launch your Browser to type the entry in the Browser address field. If you did not choose the External Security option during WebPAM installation, use the Regular connection. If you chose the External Security option during WebPAM installation, use the Secure connection.

Regular connection: http://127.0.0.1:8080/ati or http://localhost:8080/ati

Secure connection: https://127.0.0.1:8443/ati or https://localhost:8443/ati

Please note that the IP address shown above applies to a log-in at the Host PC. When you log in over a network, enter the Host PC's actual IP address or hostname.
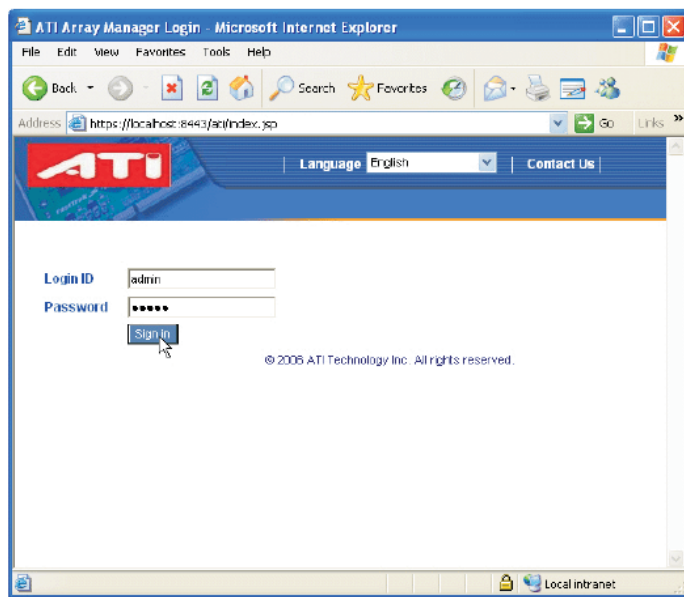
When the opening screen appears:

1. Type **admin** in the Login ID field.

2. Type **admin** in the Password field.

3. Click the Sign in button. This is the default login for the Administrator. The Login ID and Password are case sensitive. Click the WebPAM online help for instructions on adding users and changing passwords.

4. After you successfully log-in to WebPAM, you are allowed to click the button on the top such as "Language", "Help",

   or "Logout" for other requirement.
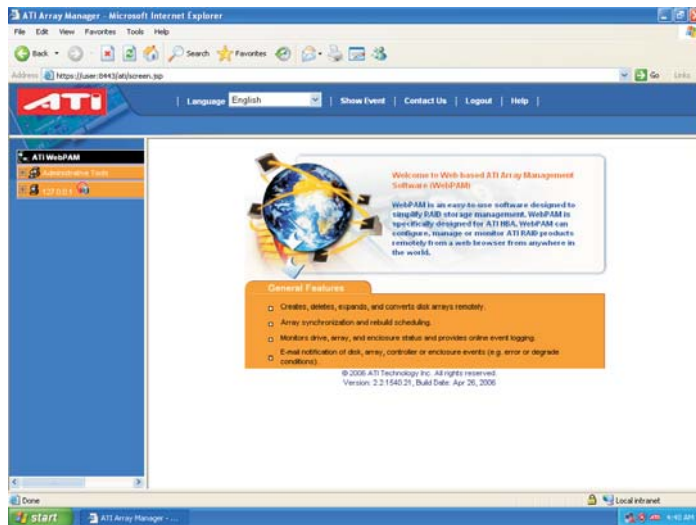
2.5   Create RAID in WebPAM

After you log-in to WebPAM, you can click the button on the left. Click 127.0.01., ATI SB600 SATA Controller, and

then Controller 1 to view the controller information.
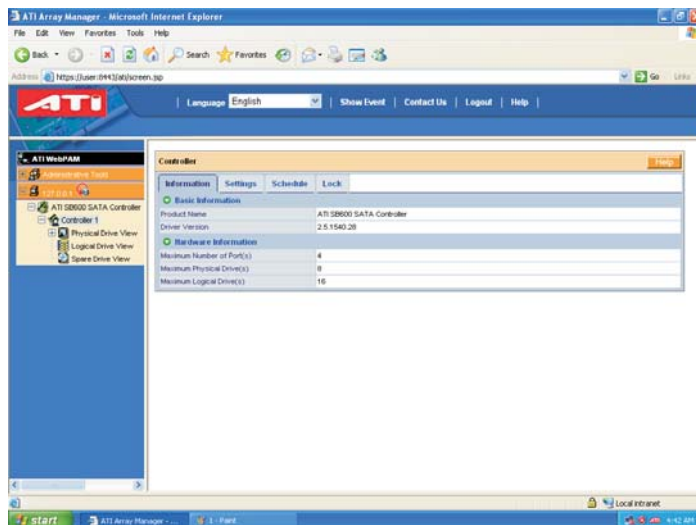
Click Logical Drive View.
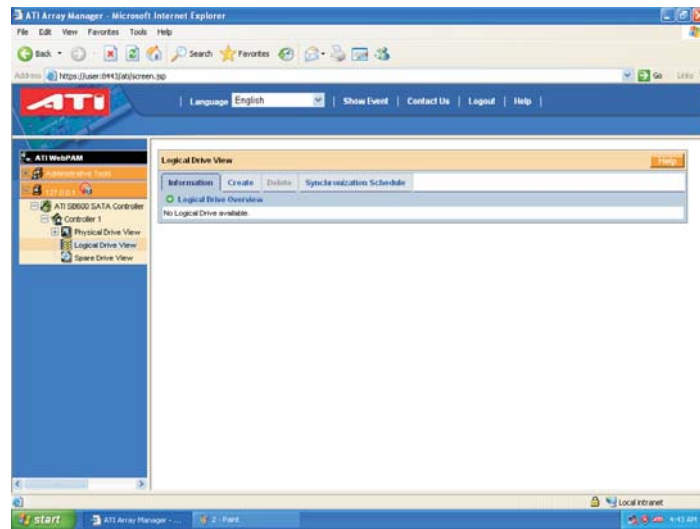
Click the Create button to create RAID array. Then you can start to select RAID level. After selecting the RAID level

that you wish, click Next for the next page. Here we take RAID 1 for example.
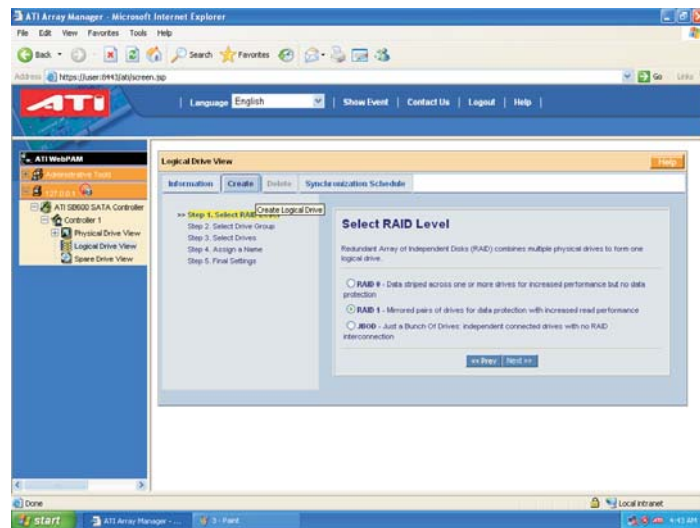
You can select drive group. Please select a free drive(s) for one logical drive that has free space. Click Next.
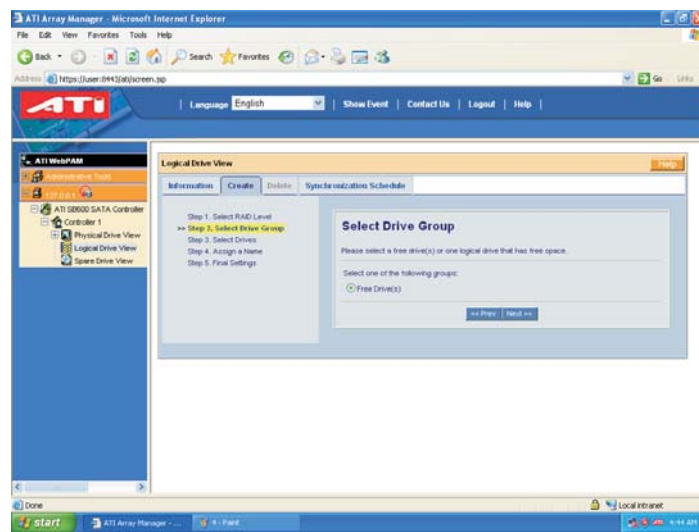

Select drives. You can choose to use maximum capacity or key in the logical drive size in (GB). Then select the drives

that you plan to create RAID. Click Next for the next page.
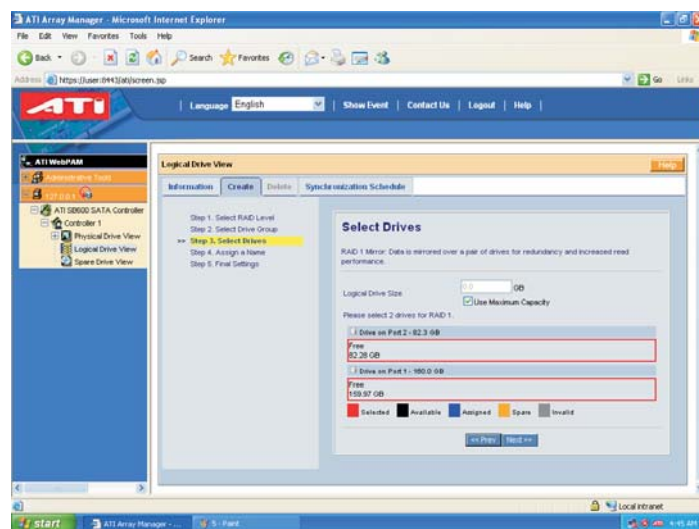
Assign a name for to the logical drive. The logical drive name that you assign is supposed to contain 1 to 32 characters. After that, please click Next.
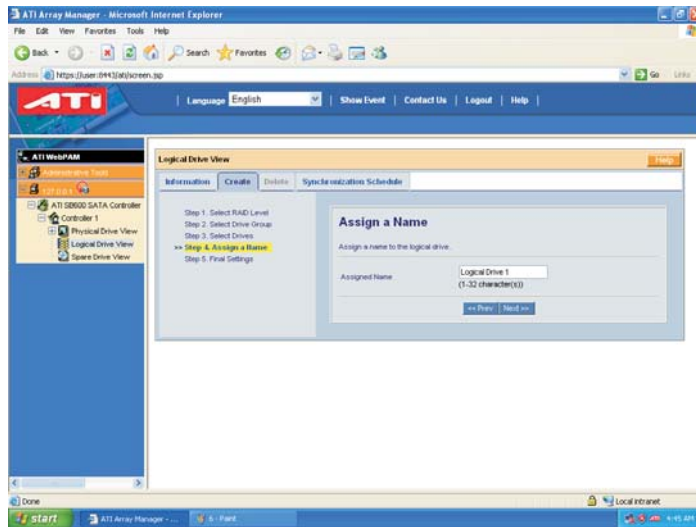
In the Final Settings page, please confirm your choices in the following list. Or you may make any changes here. If you have confirmed the information in the list, click Finish.
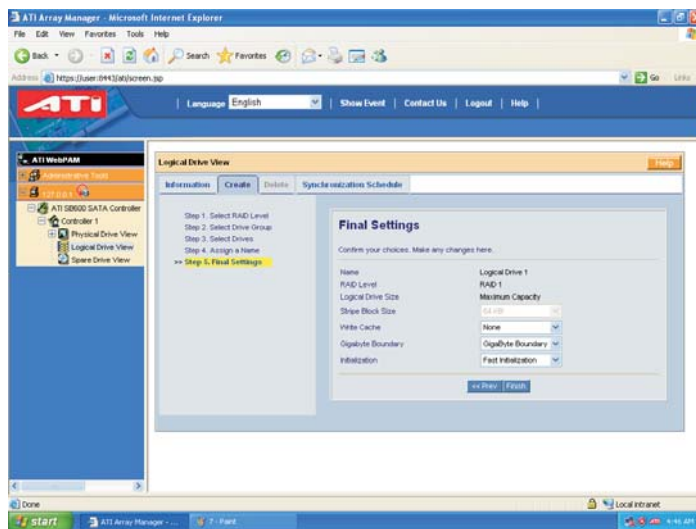
Finally, in Logical Drive Overview page, you can see the RAID configuration you just made on your system, including

Assigned Name, RAID Level, Status, Background Activity, and Capacity.
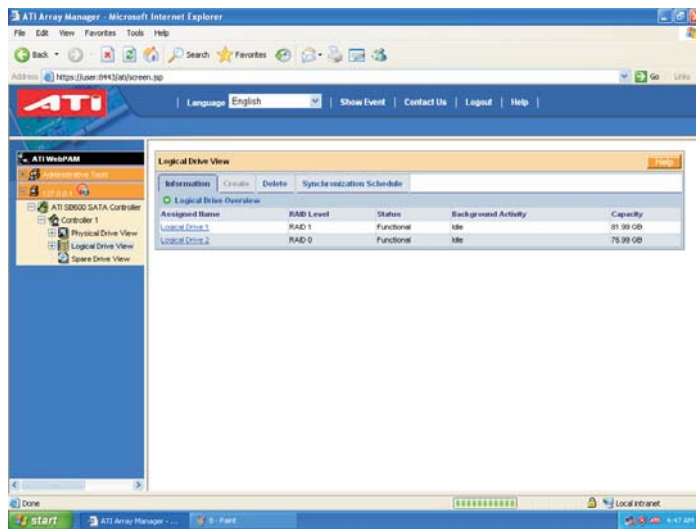
In the future, if you plan to configure other RAID functions, you may click the Delete or Synchronization Schedule on

the top to meet your RAID requirement.