WD
SATA RAID Controller

Quick Install Guide

Installation Instructions for your WD SATA RAID Controller

IMPORTANT

This WD SATA RAID Controller supports the following installation configurations: single drive non-RAID, RAID 1 and RAID 0. When installing a single SATA hard drive, follow the non-RAID installation instructions in section 2 below. The single drive install is not supported in RAID because this setup requires the simultaneous formatting of two drives.

Before Getting Started

This guide is designed to aid in the quick installation of your WD SATA RAID Controller. If you experience problems following these procedures or need further information regarding your controller, download the full version WD SATA RAID Controller User Manual or visit our online knowledge base for frequently asked questions and other common troubleshooting tips on our Web site at *support.wdc.com*.

Kit Contents

- WD SATA RAID Controller
- RAID setup and management software CD
- SATA RAID Controller drivers diskette
- Quick Install Guide
- 1-year warranty

Operating Systems

WARNING!

Using an operating system not listed below could result in data loss.

The following operating systems are supported:

- Windows® 2003 Server
- Windows XP
- Windows 2000

System Requirements

Pentium-class system with an available 32-bit PCI expansion slot (2.2- or 2.3-compliant) or 32-bit portion of a 64-bit PCI slot.

Online Product Registration

Take advantage of various WD offers by registering your SATA RAID Controller online at: *https://www.wdc.com/en/products/registration*.

Unpacking and Handling Procedures

WD controller cards are precision instruments and should be handled with care during unpacking and installation. These devices can be damaged by rough handling, shock and vibration, or electrostatic discharge (ESD). Be aware of the following precautions:

- Do not unpack the controller card until you are ready to install it. Your controller is packaged in an anti-static bag.
- Save the original packaging materials and the anti-static bag should you need to return your controller. Your warranty will be void if your returned controller is shipped in anything other than the original packaging or WD approved materials.
- To avoid ESD problems, ground yourself by touching the metal chassis of the computer or by wearing a grounding strap before handling the controller. Articles of clothing generate static electricity. Do not allow clothing to come in direct contact with the controller.
- Handle the controller by the sides only. Avoid touching the circuit board components.

Technical Support

If you need additional information or help during the installation or normal use of this product, visit our product support Web site at *support.wdc.com* to choose from the following options:

- **Warranty Services**–Obtain warranty information, warranty status, product replacement, RMA status, and shipping and packaging information.
- **Downloads Library**–Download diagnostic and installation software and drivers.
- **Technical Information**–Get product specifications, technical tips, and online forum.
- **Knowledge Base**–Explore our expert knowledge base and frequently asked questions (FAQs).
- **Service & Support Options**–Look up available service and support options in your region.
- **Contact Support**–Contact a support representative by phone or e-mail.

1 Installing the SATA RAID Controller

WARNING!

Before performing any hardware installation, back up your existing data.

If you wish to include your current bootable SATA drive as part of a bootable Mirrored (RAID 1) array on your WD SATA RAID Controller, you MUST install the Windows 2000, 2003 Server, or XP driver software FIRST onto this drive while it is still attached to your existing hard drive controller (see step 3 on the reverse side of this poster).

Each WD SATA RAID Controller supports up to two SATA hard drives. For optimal performance, install two identical SATA drives of the same model and capacity. The drives' matched performance allows the array to function better as a single drive. If you are striping (RAID 0) for performance, use up to two new SATA drives. If mirroring (RAID 1) for protection, you can use two new SATA drives OR use an existing SATA drive and a new SATA drive (the new drive must be the same size or larger than the existing drive).

1. Power off the computer and unplug the power cord.
2. Remove the system cover (refer to your system manual for instructions).
3. Remove the inside slot cover of an available 32-bit PCI slot on the motherboard.
4. Install the WD SATA RAID Controller into the open slot. Secure the bracket to the system's frame (see Figure 1).
5. Attach your system case's 2- or 4-pin LED cable to the LED connector on the WD SATA RAID Controller.

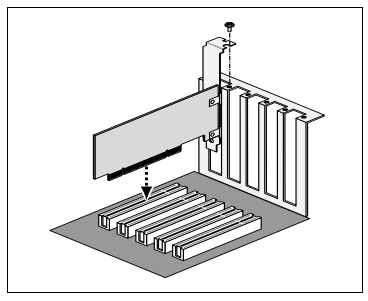

Figure 1

6. Connect one SATA data cable to each SATA hard drive. Then attach the other end(s) of the cable(s) to the Port 1 or Port 2 connector(s) on the WD SATA RAID Controller (see Figure 2).
   Note: The WD SATA RAID Controller is a PCI Plug-n-Play (PnP) device. No changes are necessary in the Motherboard CMOS Setup for resources or drive types in most applications.

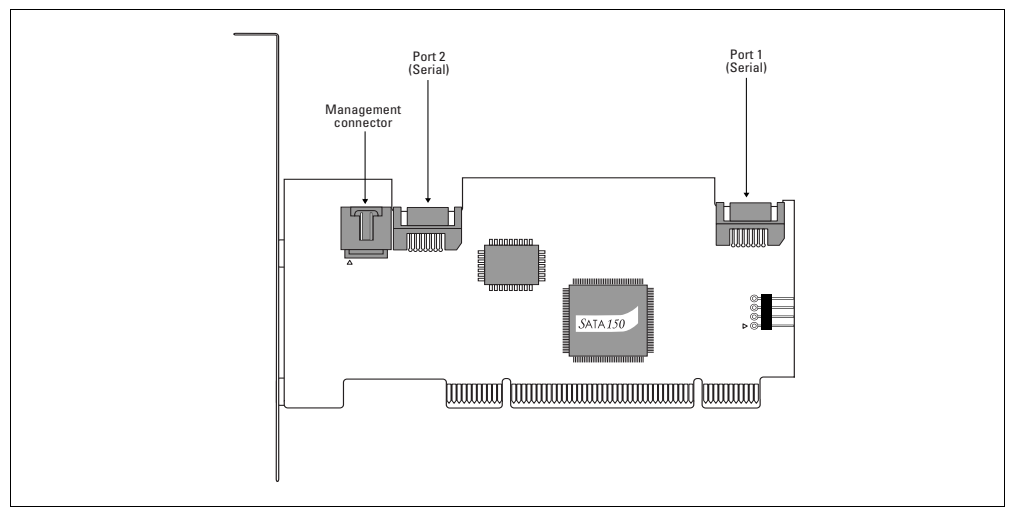

Figure 2

2 Creating a Disk Array

The WD SATA RAID Controller allows the creation of one or two drives in a striped array, or two drives in a mirrored array. You can also install a single, non-RAID drive and connect it to the WD SATA RAID Controller.

Use the onboard WD EasyBuild™ BIOS utility to create a RAID disk array using the attached drives. There are five different ways to create this array:

- Single (non-RAID)
- Performance (RAID 0)
- Security, using two new SATA hard drives (RAID 1, recommended)
- Security, using an existing SATA hard drive and a new SATA drive (RAID 1)
- Security, using Quick Initialization (RAID 1)

Follow the first three steps below prior to executing the steps for each of the different setup options above.

1. Boot your system. If this is the first time you have booted with the WD SATA RAID Controller and drives installed, the EasyBuild BIOS will display the following screen.

```
WD SATA RAID Controller
(c)2003 Western Digital Technologies, Inc. All Rights
Reserved

No array defined . . .

Press <Ctrl-F> to enter EasyBuild (tm) Utility
Or press <ESC> key to continue booting the system
```

2. Press CTRL+F or CNTL+A (depending on the BIOS screen displayed by your controller) to enter the EasyBuild Utility Main Menu.

```
EasyBuild(tm) Utility 2.xx (c)2003 Western Digital
Technologies, Inc.

                  [Main Menu]

        Auto Setup . . . . . .[1]
        View Drive Assignments . . . . . .[2]
        Define Array . . . . . .[3]
        Delete Array . . . . . .[4]
        Rebuild Array . . . . . .[5]


                    [Keys Available]

Press 1...5 to Select Option        [ESC] Exit
```

3. Begin creating an array as follows:
   - To create a single SATA drive non-RAID array, press 3.
   - To create all other types of RAID arrays, press 1 to display the Auto Setup Options Menu. This is the fastest and easiest method for creating your first RAID array.

Setting Up a Single SATA Non-RAID Drive

To set up a single SATA non-RAID drive, follow these steps:

1. Press the ARROW keys to highlight the array number you wish to define, then press ENTER to make your selection. The **Define Array Definition Menu** appears.
2. Move to RAID mode and press the SPACEBAR to cycle through array types until it says **Stripe**. Leave **Stripe Block** size and **Gigabyte Boundary** at their default values.
3. Move to **Drive Assignments**, highlight a drive, and press the SPACEBAR to change one drive to **Y**. Select a drive on SATA drive channel **1** or **2**.
4. Press CTRL+Y to save the array information. The **Define Array** menu appears again with the new array defined.
5. Press the ESC key twice to exit the EasyBuild utility. Your system will reboot automatically. After reboot, the EasyBuild BIOS will appear showing your newly created array.

```
WD SATA RAID Controller
(c)2003 Western Digital Technologies, Inc. All Rights Reserved

ID       MODE       SIZE       TRACK-MAPPING       STATUS
1 *    1+0 Stripe  80024M       611/128/32        Functional


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

Once the drive has been created, format and partition the drive as a new single hard drive. Use a Windows boot disk, or boot to a Windows 2003 Server, XP, or 2000 operating system CD to partition and format the new drive in **Disk Management**.

Proceed to section 3 ("Install Software Drivers") and follow the instructions for WD SATA RAID Controller driver installation during Windows setup.

Creating an Array for Performance (RAID 0)

To create an array for best performance, follow these steps:

1. Press the SPACEBAR until **Performance** appears under the **Optimize Array for** section.
2. Press CTRL+Y to save and create the array.
3. Follow the directions on-screen to reboot your system.

Once the array has been created, format and partition the array as if it were a new single hard drive. Use a Windows boot disk, or boot to a Windows 2003 Server, XP, or 2000 operating system CD to partition and format the new array in **Disk Management**.

For bootable drive arrays, go to section 3 ("Install Software Drivers") and follow the instructions for WD SATA RAID Controller driver installation during Windows setup.

Creating a Security Array with Two New Drives (RAID 1, recommended)

Under the Security setting, WD SATA RAID Controller permits two drives to be used for a single mirrored array.

NOTE: When creating a Security array with new drives, a feature called Gigabyte Boundary will automatically be set to ON.

To create an array for data protection using new hard drives, follow these steps:

1. Press the SPACEBAR until **Security** appears under the **Optimize Array for** section.
2. Press CTRL+Y to save your selection.
3. The window below will appear.

```
Do you want the disk image to be duplicated to another or do
quick initialize or create only?
Y - Create and Duplicate
N - Create Only
I - Create and Quick Initialize
```

4. Press N for the **Create Only** option.
5. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system.

```
Array has been created.
<Press Any Key to Reboot>
```

Once the array has been created, format and partition the array as if it were a new single hard drive. Use a Windows boot disk, or boot to a Windows 2003 Server, XP, or 2000 operating system CD to partition and format the new array in **Disk Management**.

For bootable drive arrays, go to section 3 ("Install Software Drivers") and follow the instructions for WD SATA RAID Controller driver installation during Windows setup.

continued on reverse

2 Creating a Disk Array (cont'd)

Creating a Security Array with an Existing Hard Drive (RAID 1)

Under the Security setting, the WD SATA RAID Controller permits two drives to be used for a single Mirrored array in Auto Setup.

Use this method if you wish to use a drive in a single Mirrored array that already contains data and/or is the bootable system drive in your system. You will need another SATA drive of identical or larger storage capacity to set up the array.

WARNING!

If you are creating a Security array using an existing hard drive, back up any important data. Failure to do so could result in data loss.

IMPORTANT

If you wish to include your current bootable drive as part of a bootable Mirrored (RAID 1) array on your WD SATA RAID Controller, do NOT connect this drive to the WD SATA RAID Controller yet.

FIRST, you MUST install the Windows 2003 Server, XP, or 2000 driver software on your existing hard drive. See section 3 ("Install Software Drivers") for instructions on WD SATA RAID Controller driver installation during Windows setup.

Follow these steps to create a security array with an existing hard drive:

1. Press the SPACEBAR to choose **Security** under the **Optimize Array for** section.
2. Press CTRL+Y to save your selection. The window below will appear.

```
Do you want the disk image to be duplicated to another or do
quick initialize or create only?
Y - Create and Duplicate
N - Create Only
I - Create and Quick Initialize
```

3. Press **Y** for the **Create and Duplicate** option. The window below will appear asking you to select the source drive to use. EasyBuild will copy all data from the source drive to the target drive.

```
                    Source Disk

Channel:ID          Drive Model          Capacity (MB)
  -----               -----                -----

                    Target Disk

Channel:ID          Drive Model          Capacity (MB)
  -----               -----                -----

              [Please Select A Source Disk]
Channel:ID          Drive Model          Capacity (MB)
1 :           WD WD740GD-00DAC3            74025
2 :           WD WD740GD-00DAC3            74025

[↑] Up [↓] Down [ESC] Exit [Ctrl-Y] Save
```

4. Use the arrow keys to choose which drive contains the existing data to be copied. If you have two identical hard drives, determine which hard drive contains existing data via channel ID (Channel 1 or 2). These are concurrent with the physical ports on the WD SATA RAID Controller the hard drives are connected to. Port 1 = Channel 1 and Port 2 = Channel 2 (see section 1, step 6 on the front side of this guide).
5. Press CTRL+Y to save selection and start duplication. The following progress screen will appear.

```
Start to duplicate the image . . .
Do you want to continue? (Yes/No)
Y - Continue  N - Abort
```

6. Select **Y** to continue. If you choose **N**, you will be returned to step 1.
7. Once complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system.

```
Array has been created.
<Press Any Key to Reboot>
```

The computer should now boot to the operating system on the source drive (now duplicated to the target drive). The source drive will have no visible changes other than in **Device Manager** where it will be listed as the new array instead of a single drive model.

NOTE: Disk duplication may take up to several hours depending on how much data will be copied to the target drive. For example, 120 GB of data will take an average of one to two hours to be duplicated in a newer computer system.

Creating a Security Array with Quick Initialization (RAID 1)

Under the Security setting, the WD SATA RAID Controller permits two drives to be used for a single Mirrored array in Auto Setup.

Use this setting to create a mirrored (RAID 1) array with one or two existing hard drives containing data that you do not want to keep. This method erases the first data block from your existing drives.

WARNING!

Using the Quick Initialization option on existing drives will result in the loss of all data on those drives.

NOTE: When creating a Security array with new drives, a feature called Gigabyte Boundary will automatically be set to ON.

To create an array for data protection using two new SATA hard drives, follow these steps:

1. Press the SPACEBAR to choose **Security** under the **Optimize Array for** section.
2. Press CTRL+Y to save your selection. The window below will appear.

```
Do you want the disk image to be duplicated to another or do
quick initialize or create only?
Y - Create and Duplicate
N - Create Only
I - Create and Quick Initialize
```

3. Press **I** for **Create and Quick Initialize**.
4. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system.

```
Array has been created.
<Press Any Key to Reboot>
```

Once the array has been created, format and partition the array as if it were a new single hard drive. Use a Windows boot disk, or boot to a Windows 2003 Server, XP, or 2000 operating system CD to partition and format the new array in **Disk Management**.

For bootable drive arrays, go to section 3 ("Install Software Drivers") and follow the instructions for WD SATA RAID Controller driver installation during Windows setup.

3 Installing Software Drivers

The following are driver installation procedures for the Windows operating systems that support the WD SATA RAID Controller. The software drivers for Windows are included on the device drivers diskette.

Drivers and installation instructions for other operating systems are downloadable from our Web site at *support.wdc.com*.

New Windows Server 2003 Installation

The following details the installation of the WD SATA RAID Controller drivers while installing Windows Server 2003.

1. Start the installation by booting from the drivers diskette. Press **F6** after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.
2. When the Windows Server 2003 Setup window is generated, press **S** to specify an Additional Device(s).
3. Choose **Win .NET 2003 WD SATA RAID Controller** from the list that appears on screen, then press ENTER.
4. Press **S** to use the driver on the diskette, then press ENTER to continue with installation. The Windows Server 2003 Setup screen will appear again and display the following message: "Setup will load support for the following mass storage devices." The list will include **Win .NET 2003 WD SATA RAID Controller.**
   NOTE: If there are any additional devices to be installed, specify them now. When all devices are specified, continue to the next step.
5. From the Windows Server 2003 Setup screen, press ENTER. Setup will now load all device files and then continue the Windows Server 2003 installation.

Existing Windows Server 2003 Installation

After installing the WD SATA RAID Controller and rebooting your system, Windows Server 2003 setup will show a **Found New Hardware** dialog box.

1. Insert the WD SATA RAID Controller device drivers diskette into the floppy drive.
2. Choose **Install the software automatically** and press ENTER.
3. Choose **Win .NET 2003 WD SATA RAID Controller** from the list that appears on screen, then press ENTER.
4. If using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click **Continue**.
5. When the **New Hardware Wizard** has finished installing the WD SATA RAID Controller software, click **Finish**.

Confirm Windows Server 2003 Driver Installation

1. Right-click on the My Computer icon and select **Manage** from the popup menu.
2. From the left panel, select **Device Manager**.
3. Click the **+** in front of SCSI and RAID controllers. **Win .NET 2003 WD SATA RAID Controller** should appear.

New Windows XP Installation

The following intructions detail the installation of the WD SATA RAID Controller drivers while installing Windows XP onto the newly created array.

1. Start the installation by booting from the drivers diskette. Press **F6** after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.
2. When the Windows XP Setup window is generated, press **S** to specify an Additional Device(s).
3. Choose **WinXP WD SATA RAID Controller** from the list that appears on screen, and then press the ENTER.
4. Press **S** to use the driver on the diskette, 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 "WinXP WD SATA RAID Controller."
   NOTE: If there are any additional devices to be installed, specify them now. When all devices are specified, continue to the next step.
6. In the Windows XP Setup screen, press ENTER. Setup will now load all device files and then continue the Windows XP installation.

Existing Windows XP Installation

After installing the WD SATA RAID Controller and rebooting your system, Windows XP setup will show a **Found New Hardware** dialog box.

1. Insert the WD SATA RAID Controller drivers diskette into the floppy disk drive.
2. Choose **Install the software automatically** and press the ENTER key.
3. Choose **WinXP WD SATA RAID Controller** from the list that appears on screen, and then press the ENTER key.
4. If using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click **Continue**.
5. When the **New Hardware Wizard** has finished installing the WD SATA RAID Controller software, click **Finish**.

Confirm Windows XP Driver Installation

1. Right-click on the My Computer icon and select **Manage** from the popup menu.
2. From the left panel, select **Device Manager.**
3. Click the **+** in front of SCSI and RAID controllers. **WinXP WD SATA RAID Controller** should appear.

New Windows 2000 Installation

The following details the installation of the WD SATA RAID Controller drivers while installing Windows 2000.

1. Start the installation by booting from the drivers diskette. Press **F6** after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.
2. When the Windows 2000 Setup window is generated, press **S** to specify an Additional Device(s).
3. Choose **Win2000 WD SATA RAID Controller** from the list that appears on screen then press ENTER.
4. The Windows 2000 Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win2000 WD SATA RAID Controller."
   NOTE: If there are any additional devices to be installed, specify them now. When all devices are specified, continue to the next step.
5. From the Windows 2000 Setup screen, press ENTER. Setup will now load all device files and then continue the Windows 2000 installation.

Existing Windows 2000 Installation

After installing the WD SATA RAID Controller and rebooting your system, Windows 2000 setup will show a **New Hardware Found** dialog box.

1. Choose **Add New Hardware Wizard** from the list, and then press ENTER.
2. Choose **Add/Troubleshoot a device** and click **Next**. The new hardware wizard will show device list .
3. Choose **Mass Storage controller** and click **Next**. At the following screen click **Finish**.
4. Choose **Display a list of the known drivers for this device so that I can choose a specific driver** then click **Next**.
5. When the **Windows 2000 supported SCSI adapter drivers** list appears, click **Have disk**.
6. Insert the WD SATA RAID Controller device drivers diskette into the floppy disk drive.
7. Choose **Win2000 WD SATA RAID Controller** from the list that appears on screen, then click **Next**.
8. Click **Yes** to confirm continue the installation and copy the driver to the system.
9. Remove the diskette and click **Finish** to restart the system. Windows 2000 will then restart for the driver installation to take effect.

Confirm Windows 2000 Driver Installation

1. Right-click on the My Computer icon and select **Manage** from the popup menu.
2. From the left panel, select **Device Manager**.
3. Click the **+** in front of SCSI controllers. **Win2000 WD SATA RAID Controller** should appear.

2079-001046-A01 Sep 2005