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NI-8260

INSTALLATION GUIDE
NI 8260

This guide includes installation information for the NI 8260. For more information about configuring, using, and maintaining the NI 8260, refer to ni.com.

Contents

Related Documentation

The following documents contain information that you may find helpful as you read this manual:

- *CompactPCI Specification PICMG 2.0 R 3.0*
- *PXI Hardware Specification, Revision 2.1*
- *PXI Software Specification, Revision 2.1*
- ANSI/IEEE Standard 1014-1987, *IEEE Standard for a Versatile Backplane Bus: VMEbus*
- ANSI/VITA 1-1994, *VME64*
- *Read Me First: Safety and Electromagnetic Compatibility*, National Instruments

NATIONAL INSTRUMENTS™

Unpacking

Carefully inspect the shipping container and the NI 8260 for damage. Check for visible damage to the metal work. Check to make sure all hardware and switches are undamaged. If damage appears to have been caused during shipment, file a claim with the carrier. Retain the packing material for possible inspection and/or reshipment.

What You Need to Get Started

The NI 8260 kit contains the following items:

☐ NI 8260 module

☐ *NI 8260 User Guide*

☐ Driver media

Key Features

The NI 8260, using software RAID or JBOD mode, provides a compact storage solution in a 3U PXI Express platform.

Mainboard Features

SATA Chipset
- Marvel 88SX7042

HDD
- 4 × 250 GB (or greater) SATA (platter) hard drives

or
- 4 × 64 GB (or greater) SATA solid state hard drives

Front Panel LEDs
- Power
- HDD activity

NI 8260 Overview

The NI 8260 PXI Express/cPCI Express Storage Module supports a software-based stripped/simple/spanned RAID array. The NI 8260 is a three-slot wide hard drive storage device that holds up to four 2.5 in. solid-state or mechanical laptop hard drives. The module has a x4 PXI Express high bandwidth connector to the chassis backplane.

The following table lists the optimal NI 8260 usability options.

NI 8260	NI 8260 1 TB	NI 8260 3 TB	NI 8260 SSD
Windows XP	✓	—	—
Windows Vista	✓	✓	✓
Windows 7	✓	✓	✓

Note If you require the highest streaming performance with the NI 8260 3 TB and SSD version, Windows XP is not recommended. This is due to the 4 KB sector size incorporated in newer, higher density drives, as opposed to 512 bytes in older, lower density drives. Only operating systems such as Windows 7/Vista, which are 4 KB compatible, can properly format these drives. Using these drives under Windows XP results in reduced performance and is not recommended.

Hardware Installation

The following are general instructions for installing the NI 8260 in a PXI Express chassis.

1. Power off your PXI Express or CompactPCI Express chassis, but leave it plugged in while installing the NI 8260. The power cord grounds the chassis and protects it from electrical damage while you install the module.

2. Locate an available PXI Express or CompactPCI Express slot in the chassis. Do not install the NI 8260 in the controller slot (slot 1 in a PXI Express chassis).

Note The NI 8260 requires three open slots.

Caution To protect both yourself and the chassis from electrical hazards, leave the chassis off until you finish installing the NI 8260.

3. Remove or open any doors or covers blocking access to the slot in which you intend to install the NI 8260.

4. Touch the metal part of the case to discharge any static electricity that might be on your clothes or body.

5. Make sure the injector/ejector handle is in its downward position. Be sure to remove all connector packaging and protective caps from retaining screws on the module. Align the NI 8260 with the card guides on the top and bottom of the system controller slot.

Caution Do not raise the injector/ejector handle as you insert the NI 8260. It will not insert properly unless the handle is in its downward position so that it does not interfere with the injector/ejector rail on the chassis.

6. Hold the handle as you slowly slide the module into the chassis until the handle catches on the injector/ejector rail.

7. Raise the injector/ejector handle until the module firmly seats into the backplane receptacle connectors. The front panel of the NI 8260 should be even with the front panel of the chassis.

8. Tighten the bracket-retaining screws on the top and bottom of the front panel to secure the NI 8260 to the chassis.

9. Replace or close any doors or covers to the chassis.

Software/Driver Installation

The NI 8260 does not include any interface software to control the module. After you install the drivers from the NI 8260 Driver CD, you must use the Disk Management Utility in Windows to manage the software RAID.

> **Note** You need an external CD/DVD ROM to install the drivers. You may also access the driver CD from a desktop computer via a network share.

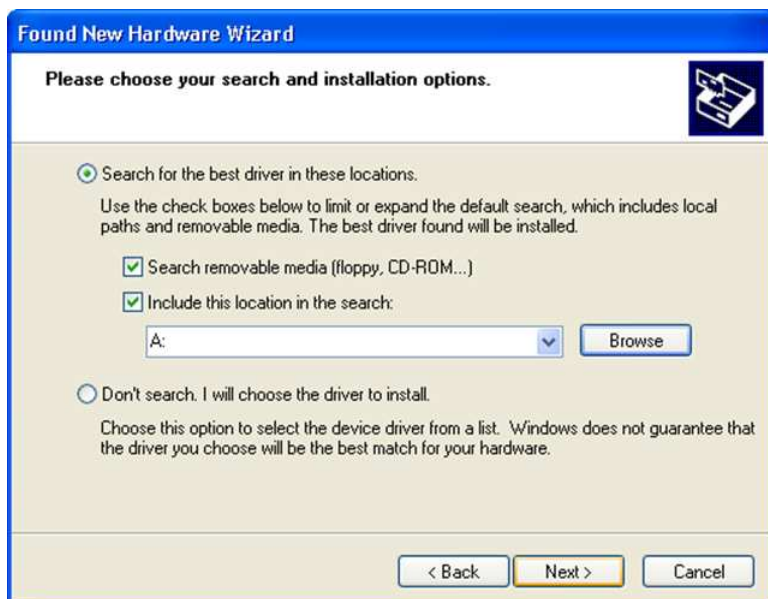Follow these steps to install the driver:

1. In the Found New Hardware Wizard welcome window, click **No, not this time** and click **Next**.
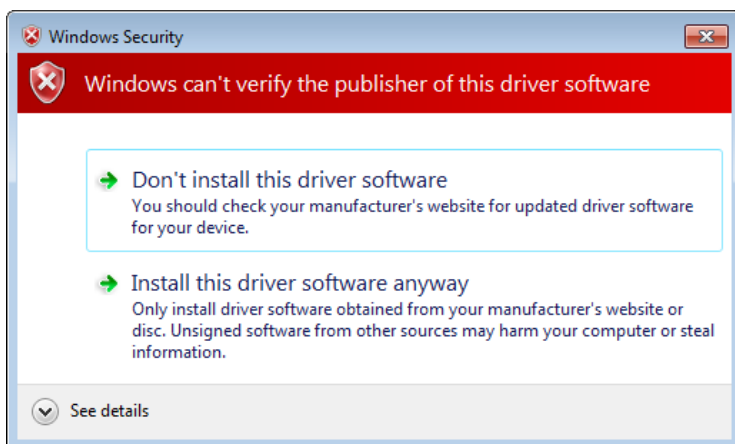

2. Click **Install from a list or specific location (Advanced)** and **Next**.

3. Browse for the driver location (point to the NI 8260 driver media) and click **Next**.

4. When you see the signed driver warning, click **Continue Anyway** in Windows XP or **Install this driver software anyway** in Windows 7.

5. Click **Finish** when the driver is installed.

RAID Creation

To configure the software RAID on the NI 8260, complete the following steps. The module uses the Marvell SATA controller, which does not have a built-in hardware RAID. Instead, build the RAID volume using the OS software.
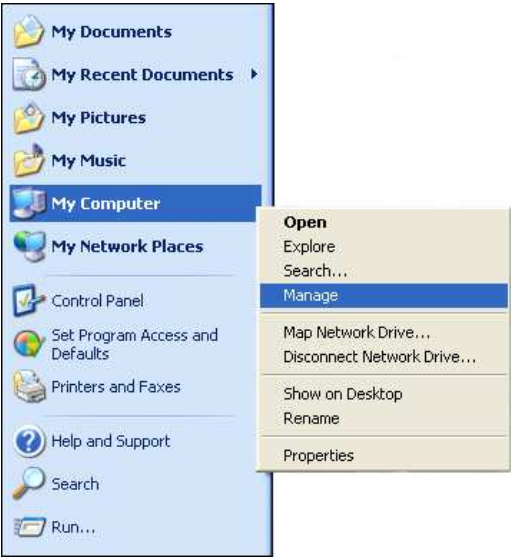
Note The NI 8260 drivers must be installed for Windows to see the drives.

Note Back up your data before you configure the software RAID.
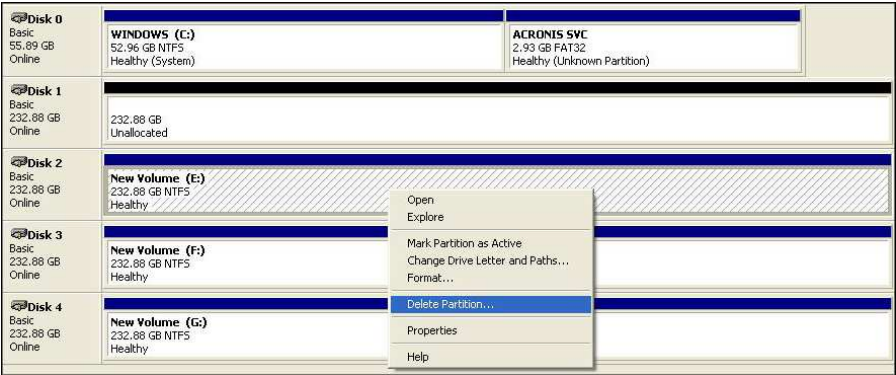
1. Right-click **My Computer** and click **Manage**.

2. Click **Disk Management** in the left window. You should see four disk drives of the same size in basic mode. Right-click any disk and select **Delete Partition**.
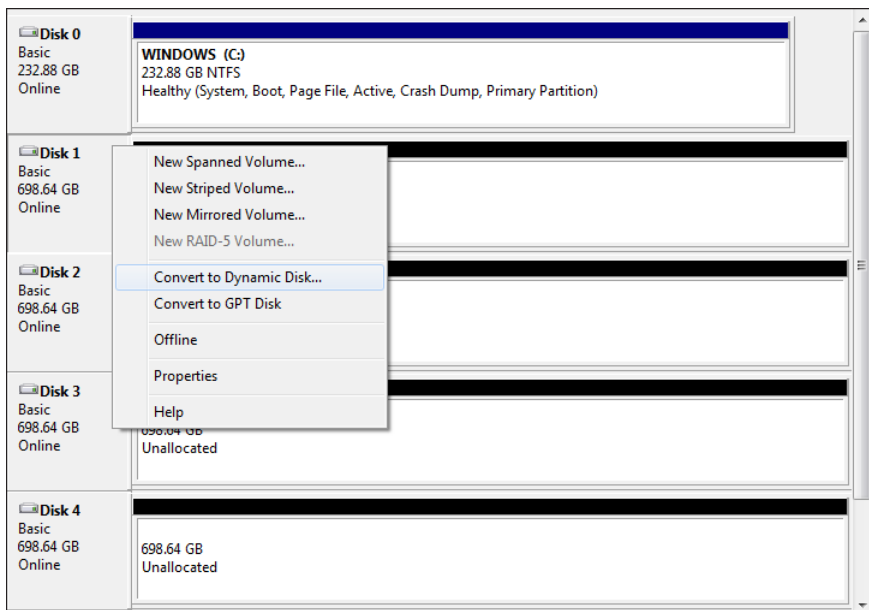
📝 **Note**   If the disks are not partitioned and in dynamic mode, skip to step 4.
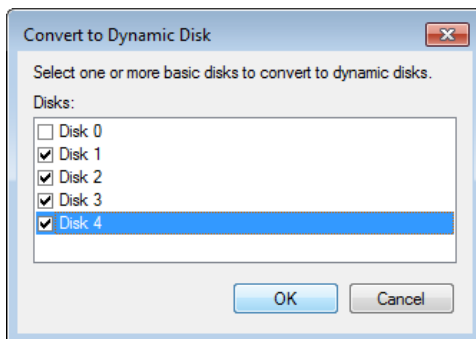
3. Convert the basic disks to dynamic disks by right-clicking each drive and selecting **Convert to Dynamic Disk...**.
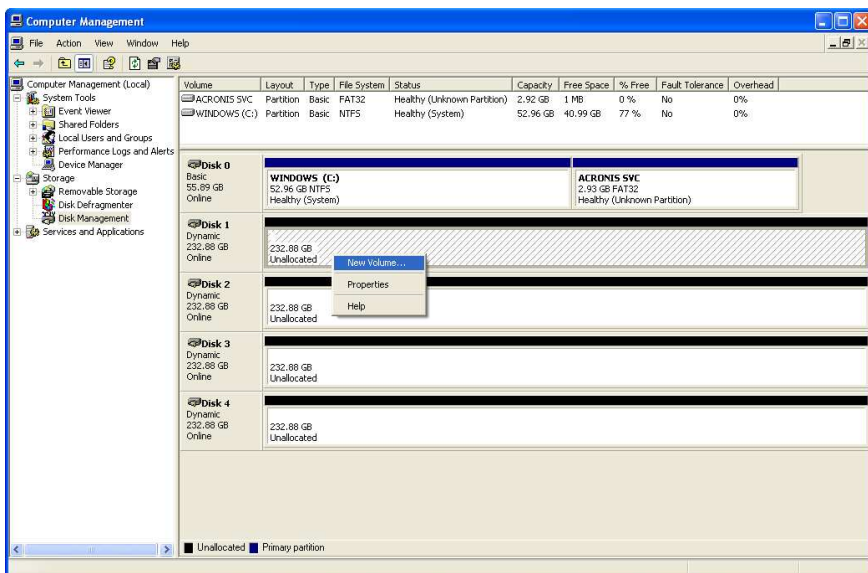

Under Windows 7, you will see the following options. Click on **Convert to Dynamic Disk...**.
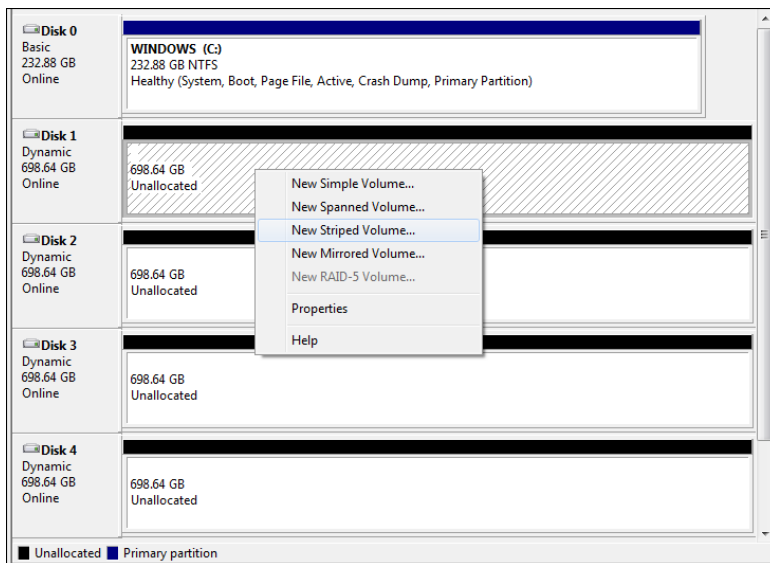
You may be given the option to batch select and convert the disks to dynamic mode.

4. To start building the RAID, right-click any dynamic disk and click **New Volume...**.

5. In Windows 7, select **New Striped Volume...** for highest data throughput to and from disk.
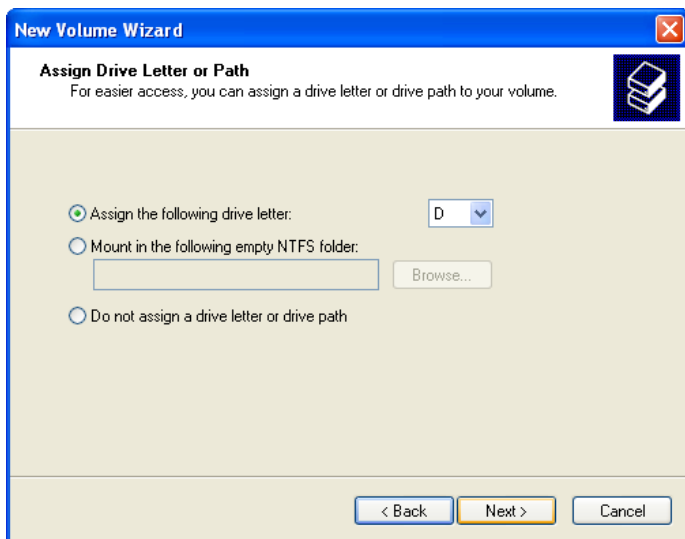

6. You can choose from three options to create the volume. For the highest data throughput to and from disk, choose the **Striped** option and click **Next**.
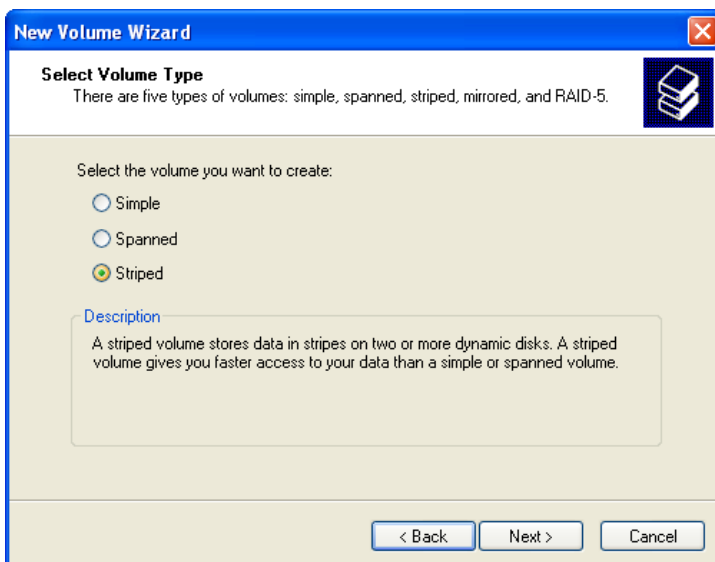
7. Add all four drives in the **Available** window to the **Selected** window and click **Next** to assign a drive letter and format the RAID volume.
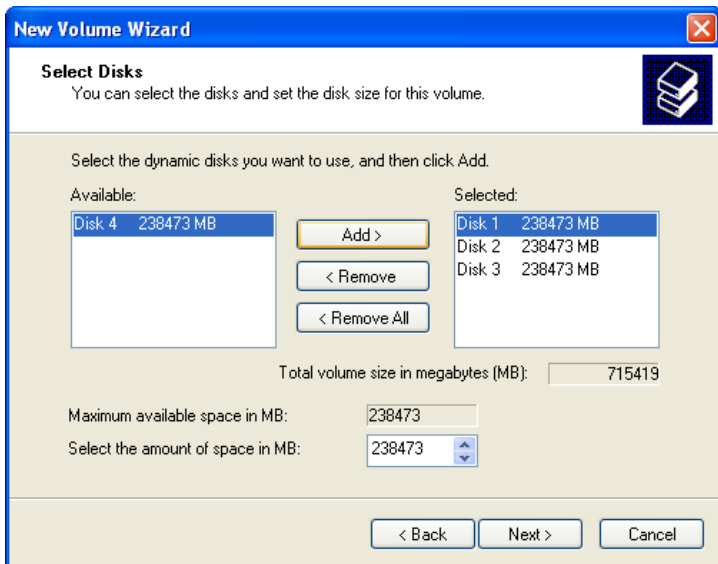
8. Assign a letter to the new drive and click **Next**.

9. Format the volume with the following settings:
   - **File system**: NTFS
   - **Allocation unit size**: 64K
   - **Volume label**: *<name of your drive>*
   - The **Perform a quick format** box is checked.

   Be sure your volume is formatted as shown below and click **Next** to format the drive.
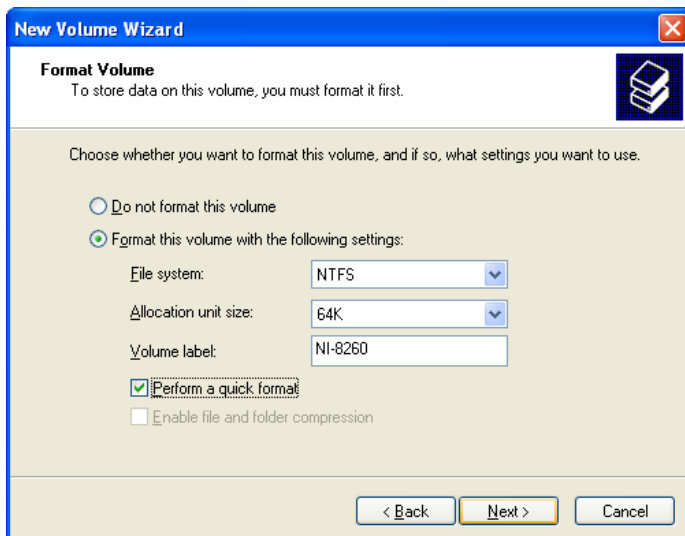
10. Verify your settings for the new volume and click **Finish**.
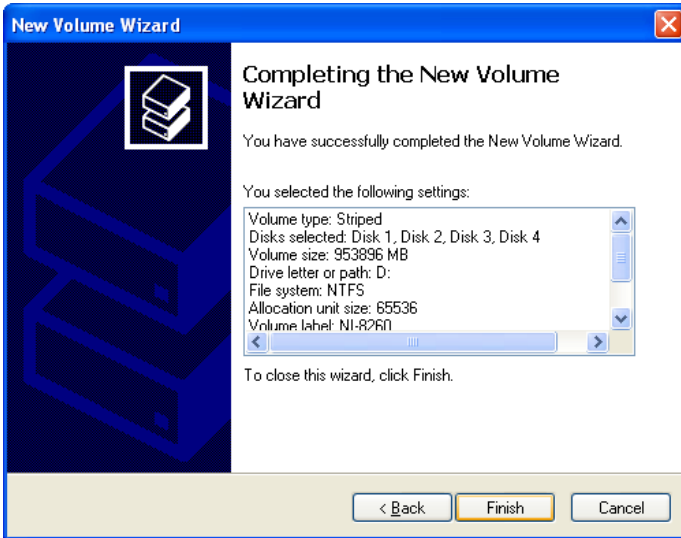
11. When the formatting is completed, you should see your new drive in **My Computer**, as shown below.

Moving the NI 8260 to a Different System

To move your NI 8260 to a different system or chassis with a different controller, complete the following steps.

If you have a RAID volume built on one system that contains data, be sure to click **OK** in step 3 so that your new system can reinitialize your RAID volume and restore your data.

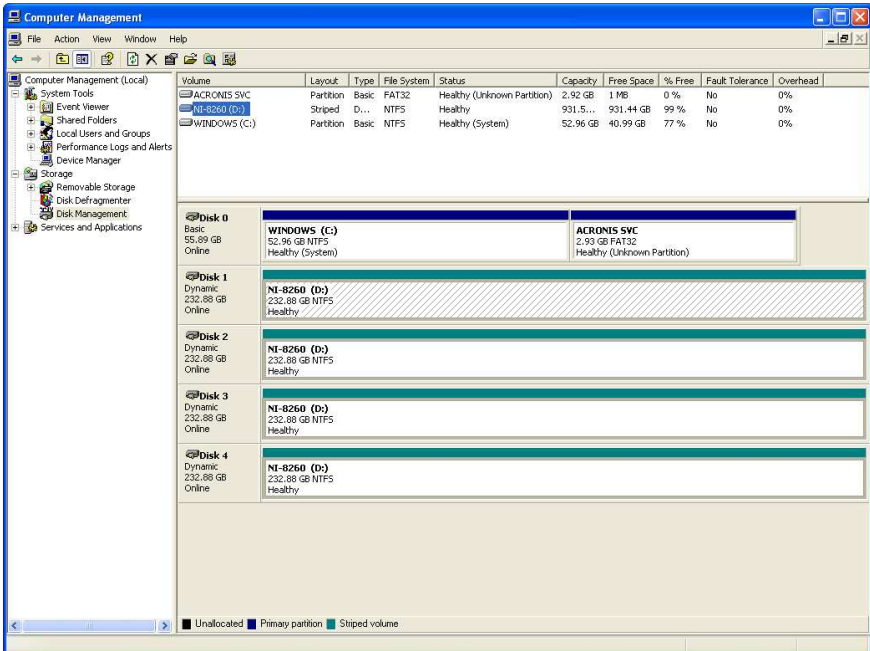📝 **Note**   The following steps apply only if the NI 8260 you are moving to a different system is in software RAID mode.

⚠ **Caution**   To avoid data loss, do not move, swap, or replace the hard drives.

1. When the system boots, go into **Disk Management**. You will see four dynamic disks with yellow caution icons. Right-click any disk with a caution icon and select **Import Foreign Disks**.
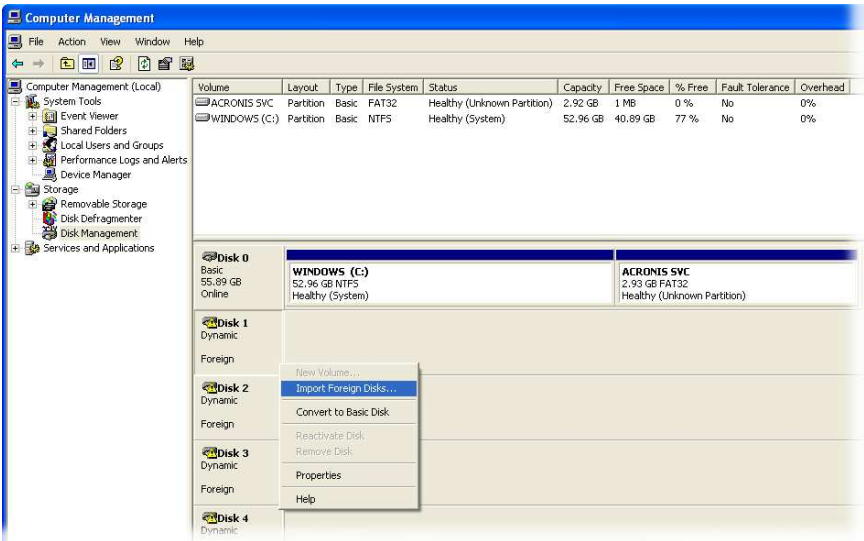
2. Be sure the box for the foreign disk group (four of four disks) is checked and click **OK**.
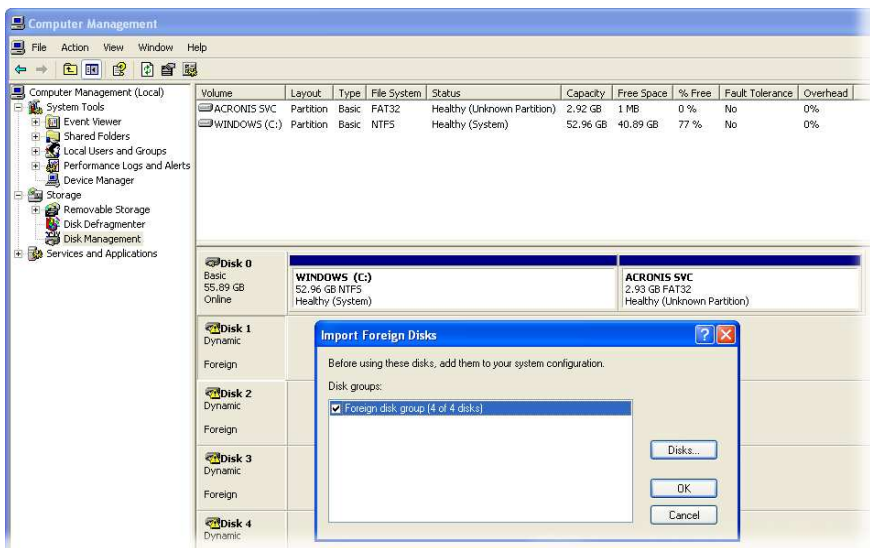
3. You may see the following dialog box if a RAID volume was present on the NI 8260 before you moved it to the new system. Click **OK** to allow the new system to reinitialize the RAID volume.

4. Your RAID drive is now ready for use on the new system.

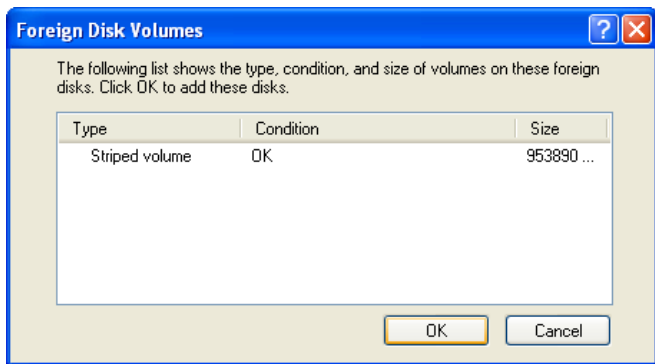| Disk 0 Basic 55.89 GB Online	(C:) 53.60 GB NTFS Healthy (System)		ACRONIS SVC 2.29 GB FAT32 Healthy (Unknown Partition)	
Disk 1 Dynamic 232.88 GB Online	NI-8260 (D:) 232.88 GB NTFS Healthy			
Disk 2 Dynamic 232.88 GB Online	NI-8260 (D:) 232.88 GB NTFS Healthy			
Disk 3 Dynamic 232.88 GB Online	NI-8260 (D:) 232.88 GB NTFS Healthy			
Disk 4 Dynamic 232.88 GB Online	NI-8260 (D:) 232.88 GB NTFS Healthy			

Specifications

This section lists the NI 8260 electrical, mechanical, and environmental specifications.

Mainboard

SATA chipset .... Marvel 88SX7042

Hard Disk Drive

Total storage capacity .... 1 TB (or greater) for HDD and 256 GB (or greater) for SSD

Interface .... Serial-ATA

Physical

Board dimensions .... Three-slot 3U PXI Express module, $6 \times 13 \times 21.6$ cm ($2.4 \times 5.1 \times 8.5$ in.)

Slot requirements .... One PXI Express module slot plus two module expansion slots

Compatibility .... CompactPCI Express spec component

Weight (250 GB × 4 HDs) .... 770 g

Weight (750 GB × 4 HDs) .... 775 g

Weight (64 GB × 4 solid state HDs) .... 601 g

Weight (300 GB × 4 solid state HDs) .... 690 g

Environment

Maximum altitude .... 2,000 m (800 mbar)

Pollution Degree 2

Indoor use only.

Operating Environment

Ambient temperature range[1]

      Rotating media (HDD)..............................5 to 50 °C

                                   (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 high temperature limit)

      Solid state media (SSD)...........................0 to 55 °C

                                   (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 low-temperature limit and MIL-PRF-28800F Class 2 high-temperature limit)

      Relative humidity range...........................10 to 90% noncondensing

                                   (tested in accordance with IEC-60068-2-56)

Storage Environment

Ambient temperature range ....-40 to 71 °C

                                   (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 limits)

Relative humidity range...................................5 to 95% noncondensing

                                   (tested in accordance with IEC-60068-2-56)

Shock and Vibration

Operational shock ....30 g peak, half-sine, 11 ms pulse

                                   (tested in accordance with IEC-60068-2-27; test profile developed in accordance with MIL-PRF-28800F)

Random vibration

      Operating ....5 to 500 Hz, 0.3 grms

                                   (with solid state hard drive)

      Nonoperating ....5 to 500 Hz, 2.4 grms

                                   (tested in accordance with IEC-60068-2-64; nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3)

Note Specifications are subject to change without notice.

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[1] For chassis that are not available in the online catalog at ni.com, contact National Instruments for supported operating temperatures.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

• EN 61326 (IEC 61326): Class A emissions; Basic immunity
• EN 55011 (CISPR 11): Group 1, Class A emissions
• AS/NZS CISPR 11: Group 1, Class A emissions
• FCC 47 CFR Part 15B: Class A emissions
• ICES-001: Class A emissions

Note For the standards applied to assess the EMC of this product, refer to the *Online Product Certification* section.

CE Compliance $\mathsf{C}\,\mathsf{E}$

This product meets the essential requirements of applicable European Directives as follows:

• 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for this product, visit `ni.com/certification`, search by model number or product line, and click the appropriate link in the Certification column.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the *Minimize Our Environmental Impact* web page at `ni.com/environment`. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

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