



SAS, SATA, and SCSI RAID Controllers

Quick Start Guide



Introduction

This *Quick Installation Guide* describes how to install your ICP RAID controller, create a bootable RAID 5 array, and then install your Microsoft® Windows® 2000/2003/XP or RedHat Linux® operating system and controller driver on that array. For other installation options, refer to the *ICP SAS, SATA, and SCSI RAID Controllers Installation and User's Guide* included on the ICP RAID Installation CD.

Note: For the latest information about the products described in this *Guide*, the support for operating systems listed, and to download drivers, visit www.icp-vortex.com.

Kit Contents

✓ ICP RAID controller

Embedded in the controller's BIOS are these utilities:

- Array Configuration Utility (ACU): Used to create, configure and manage arrays
- *SerialSelect*, *SATASelect*, or *SCSISelect*: Used to modify your controller and disk drive settings
- Disk Utilities: Used to format and verify disk drives

✓ ICP RAID Installation CD

- Drivers for the ICP RAID controller
- User Guide for the ICP RAID controller

✓ ICP Storage Manager Installation CD


- ICP Storage Manager: User-friendly application that you can use to create and manage arrays.
- RAID Controller Configuration Utility (ARCCONF): Used to perform basic array and configuration management functions
- User Guide for ARCCONF

✓ Cables (type and quantity vary, depending on controller)

✓ Low-profile bracket (depending on controller model)

✓ *Quick Installation Guide* (this document)

Step 1 Install the Controller

-  **Caution:** Electrostatic discharge (ESD) can damage your controller. Follow standard anti-ESD precautions to avoid exposing the controller to static charge.
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- a If you have a low-profile controller and a low-profile computer cabinet, replace the original full-height bracket on the controller card with the low-profile bracket supplied in the controller kit.
 - b Turn off the computer and disconnect the power cord.
 - c Open the cabinet. Refer to the manufacturer's instructions as needed.
 - d Insert the controller into an available PCI slot that's compatible with your controller and secure the controller bracket to the chassis.
 - e Connect your computer's disk activity LED cable to the LED connector on your controller (not available on some models). Attach the positive lead to pin 1.
 - f *Optional*—Connect the controller's I2C connector (not available on some models) to an I2C connector on an internal SAS/SATA backplane or enclosure. Use an I2C cable (typically included with the backplane).
 - g Install and connect any internal drives using the appropriate cable(s), then close the computer cabinet.
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Note: To build a RAID 5, you must install at least three disk drives.

- h Connect any external cables and disk drives to the controller.
 - Do not attach a cable to the controller unless the other end of the cable is attached to at least one drive. Doing so can cause unstable operation.
 - Use high-quality cables—poor quality cables degrade reliability. For SCSI configurations, avoid cables not rated for Ultra320 operation.

Step 2 Create a RAID 5 Array

A RAID 5 array is used here as an example. You can create a different level array in a similar manner.

- a Turn on the computer, then press **Ctrl+A** to enter the BIOS-based configuration utility. The Menu Options screen displays.

Note: If you have more than one controller installed, select your controller, then press **Enter**.



- b Select **Array Configuration Utility**, then press **Enter**. The ACU Menu displays.



- c Select **Initialize Drives**, then press **Enter**.
- d Select at least three disk drives for the array, press **Insert** for each selected disk drive, then press **Enter**.
- e Press **Y**, then press **Enter**. The selected disk drives are initialized, then the ACU Menu displays.

! **Caution:** Initializing disk drives deletes all data stored on these drives. Back up any data you want to keep *before* initializing the disk drives.

- f Select **Create Array**, then press **Enter**.
- g Select the disk drives you just initialized, press **Insert** for each selected disk drive, then press **Enter**.
- h On the Array Properties screen, respond as follows:

Array Type	Select RAID 5 , then press Enter .
Array Label	Type a name, then press Enter .
Array Size	Press Enter , then press Enter again to use the default granularity of GB.
Stripe Size	Press Enter to use the default (256KB).
Read Caching	Press Enter to use the default (Yes).
Write Caching	Press Enter to use the default (Enable always).
Create RAID via	Press Enter to use the default (Build/Verify).
[Done]	Press Enter .

- i When a cache warning message is displayed, type **Y**.
- j Once the array is created, a message tells you that the array can now be used. Press any key to return to the ACU Menu.

Note: Although you can start using the array now, performance is reduced until the build process is complete.

- k Press **Esc** until the Exit Utility window appears.
- l Select **Yes**, then press **Enter**. The computer restarts.

Step 3 Set up the Boot Sequence

The process you use to access your computer's BIOS Setup program and set the boot sequence varies by computer manufacturer. Refer to the instructions provided with your specific computer. Steps may be similar to:

- a During startup, press the key combination (for example, <**F2**>, <**F1**>, <**DEL**>) that starts the BIOS Setup program.
- b Go to the menu used to specify the boot sequence. Put the CD drive first—this allows you to perform Step 4 below.
- c Go to the menu used to specify the boot priority for disk drives. Put the ICP RAID controller first in this sequence.
- d Save your changes, exit Setup, and restart the computer.

Step 4 Create the Driver Disk

- a Insert the ICP RAID Installation CD and turn on the computer to boot from the CD.
- b Follow the on-screen instructions to display the CD's menu.
- c Click **Create Driver Disk**, then select your operating system. If you selected Linux, you may also need to select an architecture (depending on the type of Linux you selected).
- d Select your floppy disk drive letter, then select the format you want. You need a full format only if your floppy disk is unformatted.
- e Insert the floppy disk, then click **OK**. The computer creates the driver disk.
- f Remove and label the driver disk.

Continue with the installation of the operating system and controller driver, as described in "Step 5". If your operating system is not listed in Step 5, refer to the *ICP SAS, SATA, and SCSI Users Guide* on the RAID Installation CD.

Step 5 Install the Controller Driver with the Operating System

Windows 2000/2003/XP

- a Insert your Windows CD, then restart the computer.
- b Follow the on-screen instructions to begin the Windows installation.
- c When prompted to install a third-party driver, press **F6**.

Note: When **F6** is active, a prompt appears at the bottom of the screen for only 5 seconds. If you miss your chance to press **F6**, restart your computer.

- d Insert the driver disk, then wait until prompted to install the driver. Press **S** to specify that the driver is on the floppy disk, then press **Enter**. The computer reads the disk.
- e When the driver is found, press **Enter**. Follow the on-screen instructions to complete the installation.

Red Hat Linux

For SuSE Linux, refer to the *ICP SAS, SATA, and SCSI RAID Controllers Installation and User's Guide* on the RAID Installation CD.

Note: For the most up-to-date information on Linux support, visit www.icp-vortex.com.

- a Insert the first Red Hat installation CD.
- b Restart the computer.
- c When the Red Hat Welcome screen appears, type **linux dd** at the Boot: prompt.
- d When prompted, insert the driver disk, then select **OK**.
- e Follow the prompts to set up the environment you want.
- f If you are installing other third-party devices, install them now. Otherwise, select **Done**.
- g Continue with the Linux installation, according to the Red Hat instructions.

Step 6 Install ICP Storage Manager

Before installing ICP Storage Manager, ensure that you are logged in with administrator or root privileges. Also, remove any previous version of ICP Storage Manager. Any customization files you created using the previous version are saved and used in the upgrade.

- To remove ICP Storage Manager from Linux, type the command `rpm -erase StorMan`.
- To remove ICP Storage Manager from Windows, use the Add/Remove Programs option in the Control Panel.

Windows Installation

- a Insert the ICP Storage Manager CD. The Installation wizard starts. If this does not occur, browse the CD and click **Autorun**.
- b Follow the on-screen instructions to complete the installation. When prompted to install SNMP (Simple Network Management Protocol), do not install unless you have a specific requirement for ICP Storage Manager to work with SNMP gets and traps.

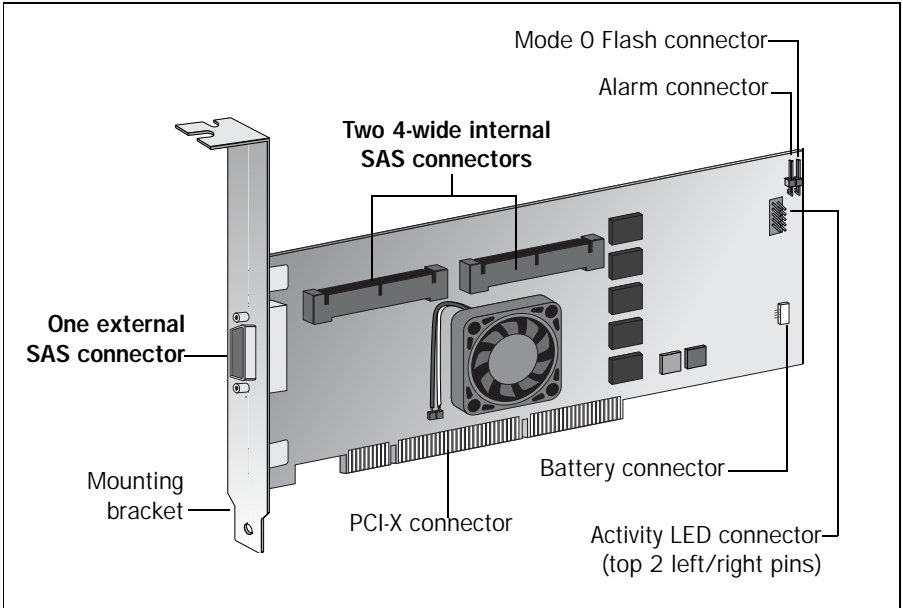
Linux Installation

On Linux, ICP Storage Manager includes the Java Runtime Environment (JRE).

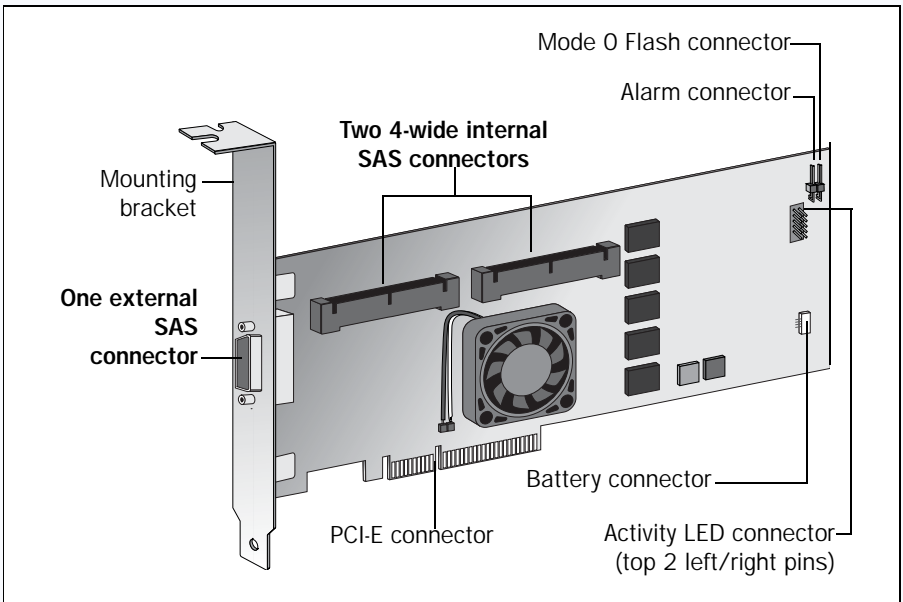
Note: For the most up-to-date information on Linux support, visit www.icp-vortex.com.

- a Insert the ICP Storage Manager CD.
- b Mount the ICP Storage Manager CD:
`mount /dev/cdrom /mnt/cdrom`
- c Change to the cdrom directory:
`cd /mnt/cdrom/linux/manager`
- d Extract the RPM package and install it:
`rpm -install ./StorMan*.rpm`
- e Unmount the ICP Storage Manager CD:
`umount /mnt/cdrom`

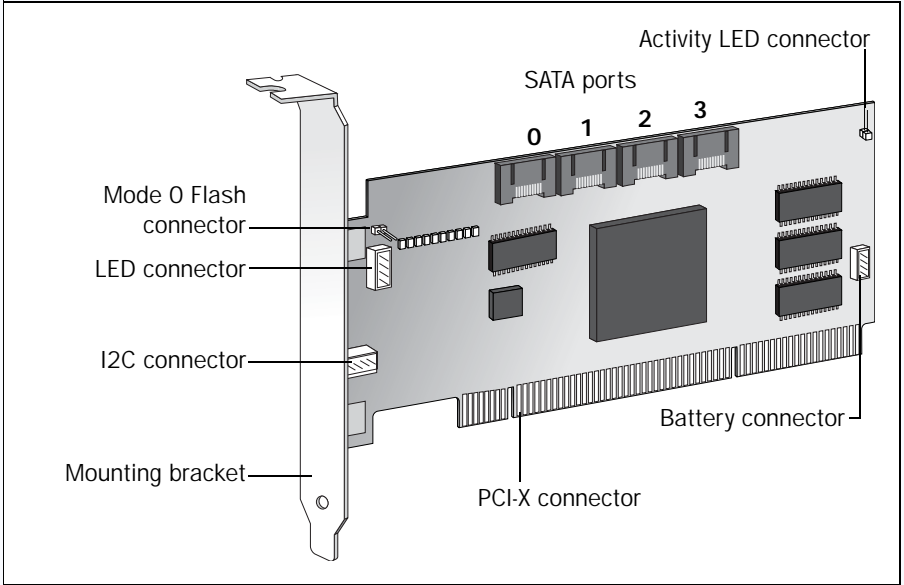
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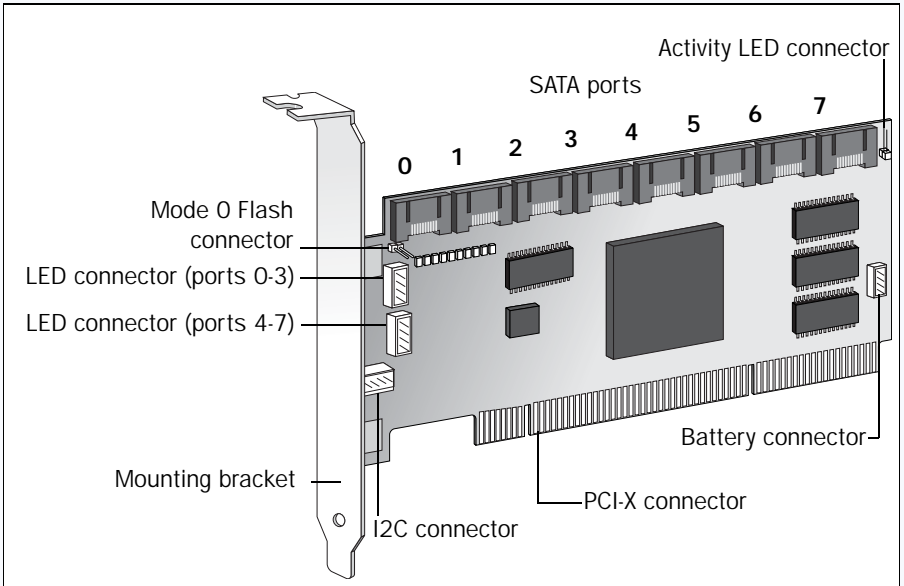
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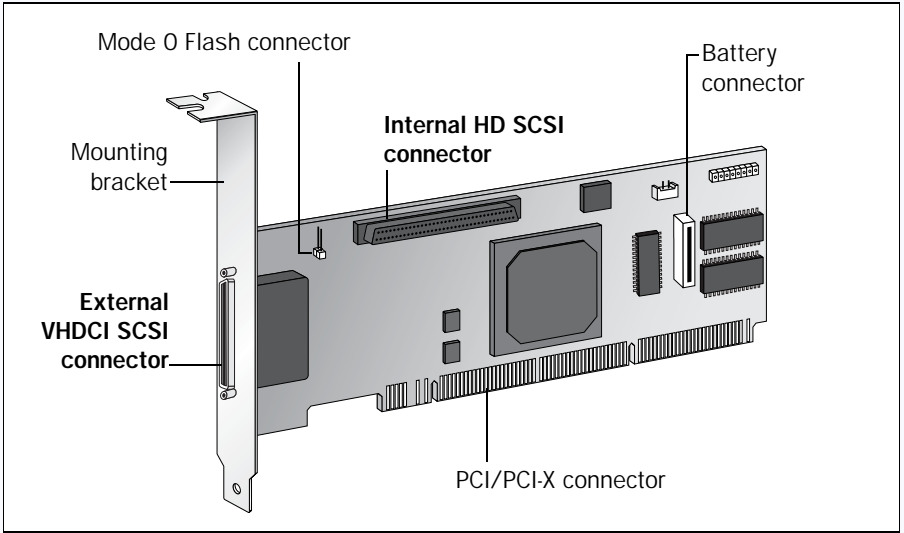
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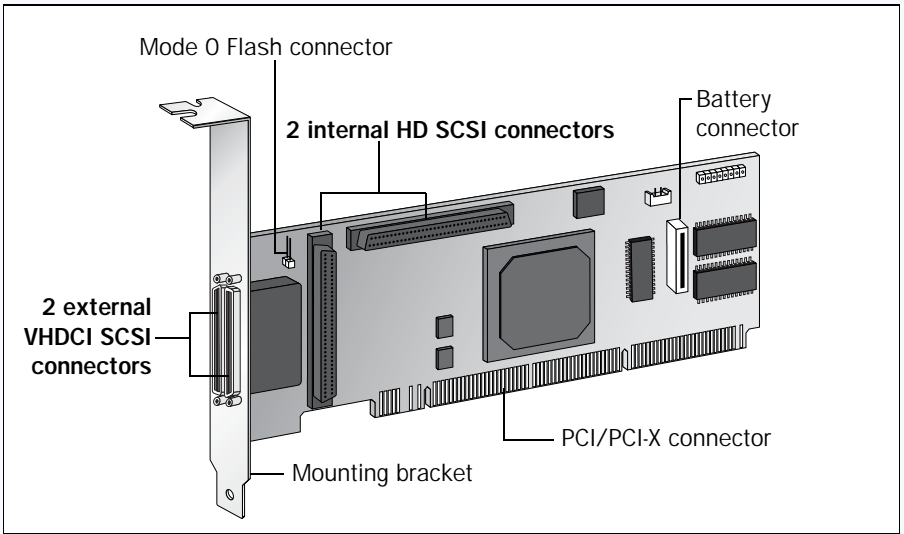
ICP9087MA



ICP9014R0



ICP9024R0



More Information

For more information about ICP RAID controllers, specifications, user guides, and updates visit www.icp-vortex.com.

To find detailed information about the controllers described in this *Quick Installation Guide*, refer to these documents:

- **Readme**—Text files located on the ICP RAID Installation CD and on the ICP Storage Manager Installation CD. These files provide late-breaking technical information.
- ***ICP SAS, SATA, and SCSI RAID Controllers Installation and User's Guide***—PDF file located on the RAID Installation CD. It provides complete information on how to install and configure your controller and attach devices.
- ***Command Line Utility User's Guide***—PDF file located on the ICP Storage Manager CD. It provides complete information on how to use ARCCONF.
- ***Online Help***—ICP Storage Manager includes embedded online Help that describes how to use ICP Storage Manager to create and manage arrays.

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