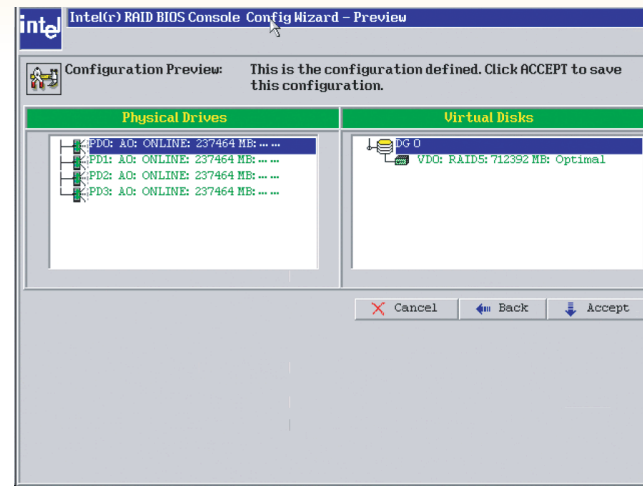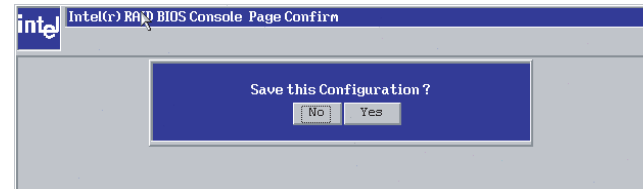## 3 (Cont.) Use Intel® RAID BIOS Console 2 to Create a RAID Volume

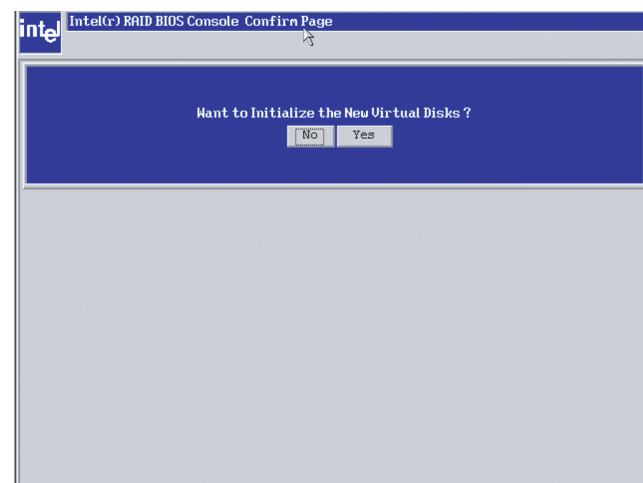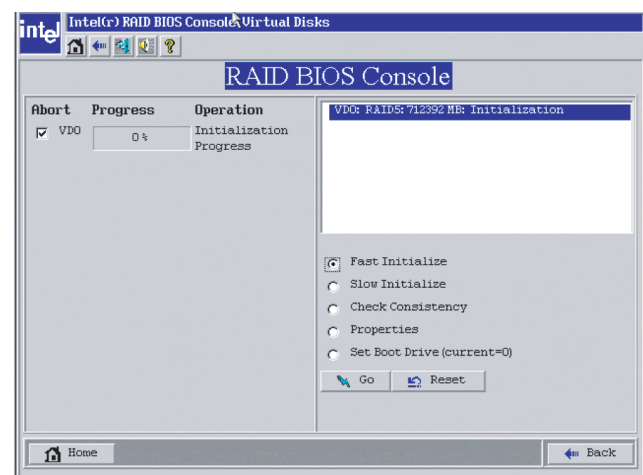⑨ Click **Accept.**

⑩ Click **Yes.**

⑪ Click **Yes.**

⑫ Select **Fast Initialize** to do a preliminary initialization of the drives for loading the operating system. A full initialization will occur in the background.

Creation of a RAID volume is now complete.

Understanding the Audible Alarm

The audible alarm will beep under two conditions: When a drive has failed, and during and following a rebuild.

The drive failure alarms are as follows:

- Degraded Array: Short tone, one second on, one second off
- Failed Array: Long tone, three seconds on, one second off
- Hot Spare Commissioned: Short tone, one second on, three seconds off

The drive failure tones will repeat until the problem is corrected or until the alarm is silenced or disabled.

The rebuild alarm tone remains on during the rebuild. After the rebuild completes, an alarm with a different tone will sound, signaling the completion of the rebuild. This is a one-time (non-repeating) tone.

The alarm can be *disabled* either in the Intel® RAID BIOS Console 2 or in the Intel® RAID Web Console 2 management utilities. When disabled, the alarm will not sound unless it is re-enabled in one of the utilities.

The alarm can be *temporarily silenced* either in the Intel® RAID BIOS Console 2 or in the Intel® RAID Web Console 2 management utilities. The alarm is not disabled and will sound again if another event occurs. The temporarily silenced alarm will be enabled if the system is power cycled.

4 Install the Server Operating System

| Microsoft Windows Server 2003* / Microsoft Windows 2000* Advanced Server Installation | OR | Linux Installation |

Install Microsoft Windows Server 2003* or Microsoft Windows 2000* Advanced Server

IMPORTANT: When the blue setup screen appears, press **<F6>**.

① Create installation medium. See the instructions at the right.

② Boot the system with the Windows Server 2003* or Windows 2000* Advanced Server CD-ROM.

③ Press **<F6>** as soon as the first blue screen appears. This will bypass mass storage detection.

④ When prompted to specify a mass storage controller:

- Select **S** to specify additional storage devices.
- Insert Microsoft Windows Server 2003* or Microsoft Windows 2000* Advanced Server installation driver diskette (created in step 1 above).
- Press **<Enter>** to select the "Installation Driver" and continue with the Windows installation.

Install Intel® RAID Web Console 2

Install the Intel® RAID Web Console 2 package from the Resource CD. For details, see the Software Guide.

To manage a RAID array from Microsoft Windows*

Choose Start | Programs | RAID WebConsole | RAID WebConsole 2 to launch the RAID Web Console 2 application. For details, see the Software Guide.

IMPORTANT: Complete the steps on the reverse side before beginning your operating system installation. If you are installing a version other than Red Hat* Enterprise Linux, see http://support.intel.com/support/motherboards/server for installation instructions.

Install Red Hat* Enterprise Linux

① Create installation medium. See the instructions at the right.

② Read the Red Hat documentation to understand the disk space / size requirements for Red Hat* Enterprise Linux.

③ Boot the system with the Red Hat* Enterprise Linux CD-ROM

④ At the boot prompt, insert the Linux installation disk that you created in step 1 above. Type `linux dd`. Press **<Enter>.**

⑤ Follow the on-screen instructions to complete the installation. The RAID controller driver will be automatically detected and installed.

Install Intel® RAID Web Console 2

Install the Intel® RAID Web Console 2 package from the Resource CD. For details, see the Software Guide.

To manage a RAID array from Red Hat* Enterprise Linux

Choose Start | Programs | RAID WebConsole | RAID WebConsole 2 to launch the RAID Web Console 2 application. For details, see the Software Guide.

For other operating system installations, see the Software Guide or readme files on the Resource CD for the driver being installed.

Creating Installation Media

① Insert the Resource CD.

② Non-Windows* system: Open the index.html file at the root of the Resource CD.

③ From the top menu of the Welcome screen, select "Drivers and Utilities" from the top menu, then select the appropriate operating system.

④ Microsoft Windows* drivers:
- Select the driver link.
- Open the driver.zip file to extract the driver files to a floppy disk or other user-specified location.

Linux or other operating system drivers:
- Select the driver link.
- Save the compressed driver files to a floppy disk or other user-specified location.

Intel® RAID Controller SRCSAS144E Diagram

Front View

SAS / SATA Port Connector for External Drives, Ports 0 - 3

Cache LED Header (J8)

PCI Express* Connector for x4 or x8 slot

196 mm

Drive Fault LED Header (J9)

SAS / SATA Port Connector for Internal Drives, Ports 4 - 7 (J10)

I²C Header (J6)

Recovery Firmware Jumper (J4)

Intel® IOP333 I/O Processor

Audible Alarm

SES2 Enclosure Management (J7)

Activity LED Header (J5)

56 mm

Back View

196 mm

Smart Battery Connector (J11)

56 mm

Choosing the Right RAID Level

RAID 0 — D1 (Disk 1), D2 (Disk 2)
- Minimum Disks: 2
- Read performance: Excellent
- Write performance: Excellent
- Fault tolerance: None

Striping of data across multiple drives in an array. This provides high performance, but no data protection.

RAID 1 — D1 D2 (Disk 1), D1 D2 (Disk 2)
- Number of Disks: 2
- Read performance: Excellent
- Write performance: Good
- Fault tolerance: Excellent

Disk mirroring, meaning that all data on one disk is duplicated on another disk. This is a high availability solution, but only half the total disk space is usable.

RAID 5 — D1 D3 (Disk 1), D2 P2 (Disk 2), P1 D4 (Disk 3)
- Minimum Disks: 3
- Read performance: Excellent
- Write performance: Fair
- Fault tolerance: Good

Striping with parity. Data and parity information are spread among each drive in the array. A good compromise of performance, fault tolerance, and drive space utilization.

RAID 10 — D1 D3 (Disk 1), D2 D4 (Disk 2), D1 D3 (Disk 3), D2 D4 (Disk 4)
- Minimum Disks: 4
- Read performance: Excellent
- Write performance: Good
- Fault tolerance: Excellent

Disk mirroring and data striping that achieves a balance between the increased data availability inherent in RAID 1 and RAID 5 and the increased read performance inherent in disk striping (RAID 0). Each drive in the array is duplicated. This level array offers high data transfer advantages of striped arrays and increased data accessibility.

RAID 50 — Disk 1, Disk 2, Disk 3, Disk 4, Disk 5, Disk 6
- Minimum Disks: 6
- Read performance: Excellent
- Write performance: Very Good
- Fault tolerance: Excellent

A RAID 50 array is a RAID 0 array striped across RAID 5 elements. Data striping of RAID 5 arrays provides increased read performance inherent in disk striping (RAID 0), and improved write performance alo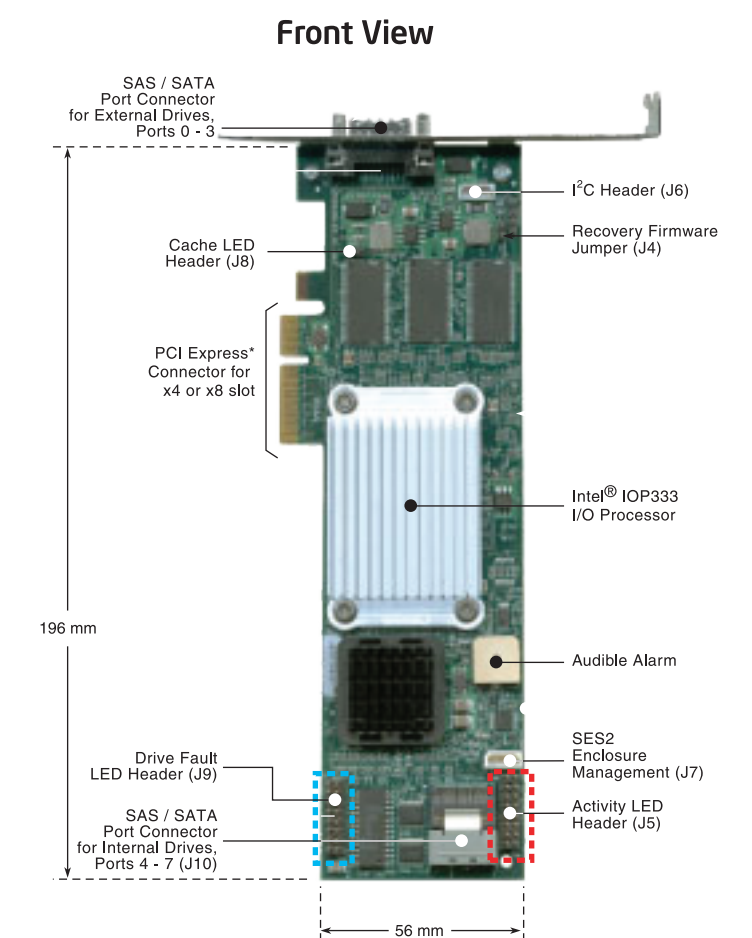ng with better fault tolerance than a single RAID 5 array.