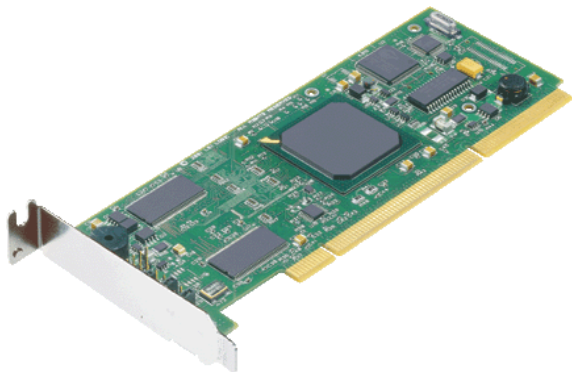


# LSI Logic MegaRAID® SCSI 320-0X ZCR Controller

## Quick Installation Guide



This document describes how to install the MegaRAID SCSI 320-0X ZCR (zero-channel RAID) controller. The MegaRAID SCSI 320-0X ZCR Controller can be installed in a special PCI-X expansion slot in a computer with a mainboard that has the LSI Logic 53C1020 or 53C1030 SCSI chip.

The zero-channel adapter converts a mainboard's onboard SCSI controller into a powerful PCI-X SCSI RAID solution and is targeted for one-unit and two-unit server environments.



### CAUTION

The MegaRAID SCSI 320-0X ZCR Controller is for use only in mainboards that have ZCR slots. Make sure that your mainboard has a ZCR slot available for this controller.

## MegaRAID SCSI 320-0X ZCR CONTROLLER INSTALLATION



### CAUTION

Make a backup of your data before you change your system configuration to ensure no loss of data.

Perform the following steps to install the MegaRAID SCSI 320-0X ZCR Controller:

### Step 1 **Unpack the MegaRAID SCSI 320-0X ZCR Controller**

Unpack the MegaRAID SCSI 320-0X ZCR Controller in a static-free environment. Remove the MegaRAID SCSI 320-0X ZCR Controller from the antistatic bag and inspect it for damage.

If the MegaRAID SCSI 320-0X ZCR Controller appears to be damaged, or if the MegaRAID

Universal Software Suite CD is missing, contact LSI Logic or your MegaRAID OEM support representative.

The CD contains utility programs, device drivers for various operating systems, and the following documentation:

- *MegaRAID 320-0X Zero-Channel PCI-X RAID Storage Adapter User's Guide*
- *MegaRAID Configuration Software User's Guide*
- *MegaRAID Device Driver Installation User's Guide*
- Software license agreement and warranty registration card

### Step 2 **Prepare the Computer**

Turn off the computer and unplug the power cord(s) from the back of the power supply. Remove the cover from the chassis.



### CAUTION

Make sure the computer is disconnected from the power and from any networks before installing the controller.

### Step 3 **Review the MegaRAID Controller Jumpers and Connectors**

Figure 1 shows the location of the jumpers and connectors on the MegaRAID SCSI 320-0X ZCR Controller. The jumpers are set at the factory and you usually do not need to change them.

**Figure 1 MegaRAID SCSI 320-0X ZCR Controller Card Layout**

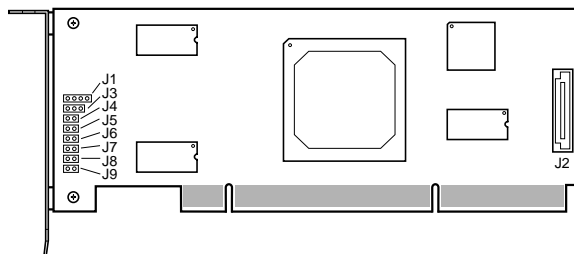


Table 1 describes the jumpers and connectors on the controller.

**Table 1 Jumpers and Connectors**

Jumper, Connector	Description	Type
J1	I <sup>2</sup> C	4-pin header. Reserved for LSI Logic internal use.
J2	Connector for battery backup daughter card	40-pin connector. This connector is for an optional daughter card that provides battery backup on the onboard cache SDRAM.
J3	Universal Asynchronous Receiver/Transmitter (UART) debugging	3-pin connector. Reserved for LSI Logic internal use.
J4	Mode select	2-pin connector. Reserved for LSI Logic internal use.
J5	Clear NVRAM	2-pin connector. Reserved for LSI Logic internal use.
J6	Write-pending indicator (dirty cache) LED	2-pin header. Connector for an LED mounted on the system enclosure. The LED indicates when the data in the cache has yet to be written to the storage devices.
J7	Onboard BIOS Disabled	2-pin header. Disables the BIOS so it does not run on the firmware.
J8	Serial EEPROM	2-pin connector. Provides board information, such as serial number, OEM number, revision number, and manufacturing data. This eliminates the need to open the system to obtain board information.
J9	NMI (nonmaskable interrupt)	2-pin connector. Reserved for LSI Logic internal use.

#### Step 4 Install the MegaRAID SCSI 320-0X ZCR Controller on the Mainboard

Insert the MegaRAID SCSI 320-0X ZCR Controller in a PCI-X ZCR slot on the mainboard, as shown in Figure 2. Press down gently but firmly to ensure the card is properly seated in the slot. Secure the MegaRAID SCSI 320-0X ZCR Controller to the computer chassis with the bracket screw.

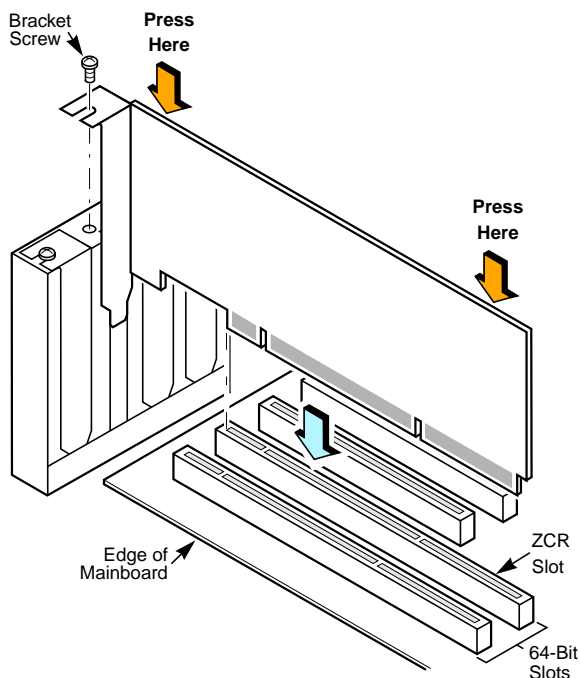
**Note:** See your mainboard guide for information about the ZCR slot.



**CAUTION**

If your board has a battery backup daughter card, *never* apply pressure to the daughter card when inserting the adapter. Applying pressure could break the card.

**Figure 2 Installing the MegaRAID SCSI 320-0X ZCR Controller**



#### Step 5 Configure and Install the SCSI Devices

Configure the SCSI devices and install them in the host system computer case.

**Note:** See the documentation for the SCSI devices for preinstallation configuration requirements.

#### Step 6 Connect the SCSI Devices to the ZCR-Enabled Mainboard SCSI Controller

Connect the SCSI cables between the system's onboard SCSI controller and the SCSI devices. Refer to the system's documentation to view connector locations for the server.

**Note:** See the mainboard manual for SCSI connector locations.

## Step 7 Power-Up the Computer

Replace the computer cover and reconnect the power cord(s). Turn on power to the computer. During boot, a MegaRAID BIOS message similar to the following displays:

```
LSI MEGARAID BIOS VERSION xxxx [date]
Copyright(c) 2005, LSI Logic Corp.
HA-1 (Bus x Dev y) LSI MegaRAID SCSI 320-
0x PCI-X
Standard FW xxxx DRAM=xxx MB(SDRAM)
```

The firmware takes several seconds to initialize. During this time the adapter scans the SCSI bus(es).

## Step 8 Run the MegaRAID BIOS Configuration Utility

When the message "Press <Ctrl><M>" appears on the screen, press <Ctrl> <M> immediately to run the MegaRAID BIOS Configuration Utility.

**Note:** Refer to the *MegaRAID Configuration Software User's Guide* on the MegaRAID Universal Software Suite CD for detailed steps on configuring physical arrays and logical drives.

## Step 9 Install the Operating System Driver

The MegaRAID SCSI 320-0X ZCR Controller can operate under MS-DOS or any DOS-compatible operating system using the standard AT BIOS INT 13h Hard Disk Drive interface. To operate with other operating systems, you must install software drivers.

The MegaRAID Universal Software Suite CD includes drivers for the supported operating systems. You can view the supported operating systems and download the latest drivers for RAID adapters on the LSI Logic web site at <http://www.lsillogic.com/downloads/selectDownload.do>.

Access the download center and follow the steps to download the driver.

Refer to the *MegaRAID Device Driver Installation User's Guide* on the MegaRAID Universal Software Suite CD for details on installing the driver. Be sure to use the latest Service Packs provided by the operating system manufacturer and review the `readme` file that accompanies the driver.

## SUPPORTED RAID LEVELS

The MegaRAID SCSI 320-0X ZCR Controller supports disk arrays using the following RAID levels:

- **RAID 0 (Data Striping):** Data is striped across all disks in the array, enabling fast data throughput. There is no data redundancy. All data is lost if any disk fails. (1–30 disk drives)
- **RAID 1 (Disk Mirroring):** Data is written simultaneously to two disks, providing complete data redundancy if one disk fails. The array capacity is equal to the size of the smaller of the two hard drives. (2 disk drives)
- **RAID 5 (Disk Striping with Distributed Parity):** Data is striped across all disks in the array. Part of the capacity of each disk stores parity information that reconstructs data if a disk fails. Provides good data throughput for applications with high read request rates. (3–30 disk drives)
- **RAID 10 (RAID 1 and RAID 0 in Spanned Arrays):** Uses mirrored pairs of disks to provide complete data redundancy. Provides high data throughput rates. (4–16 disk drives; eight spans times two hard drives in each array)
- **RAID 50 (RAID 5 and RAID 0 in Spanned Arrays):** Uses both parity and disk striping across multiple disks to provide complete data redundancy. Provides high data throughput rates. (6–30 disk drives)

## TECHNICAL SUPPORT

If you need help installing, configuring, or running the MegaRAID SCSI 320-0X ZCR controller, contact LSI Logic Technical Support in the U.S. at:

**Phone:** 678-728-1250 or 800-633-4545 #3

**Web Site:**  
<http://www.lsillogic.com/downloads/selectDownload.do>

**E-mail:** [support@lsil.com](mailto:support@lsil.com)

In Europe, you can contact the LSI Logic Technical Support team at:

**Phone:** +44.1344.413.441 (English) or  
+49.89.45833.338 (Deutsch)

**E-mail:** [eurosupport@lsil.com](mailto:eurosupport@lsil.com)



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<http://www.lsillogic.com/contacts/index.html>

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