

# Marvell PCIe SATA eSATA Card FAQs

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This document contains some helpful FAQs should you run into any issues:

1. [How do I rebuild my RAID array?](#)
2. [General Troubleshooting](#)

In order to rebuild a RAID array, you need to replace a physical drive with an identical drive on the same RAID controller. Although standard RAID levels are generally agreed upon throughout the industry, the implementation varies between manufacturers. RAID arrays are typically not accessible when they are moved to another controller, and data may be unrecoverable if the drives are out of order or have been formatted or accessed by another RAID controller.

If a RAID controller has failed, you should get the exact same model of RAID controller.

**Note:** If a drive or drives were damaged, it is possible that the RAID array may be permanently unrecoverable.

RAID should not be considered a replacement for backing up your data. If critical data is going onto a RAID array, you should back up the data on another physical drive or logical set of drives.

### Rebuild a RAID array

RAID Mode	Max # of failed drives	Procedure
RAID 1	Only one drive is needed for recovery.	<ol style="list-style-type: none"><li>1. Determine which drive is operational by using the RAID management utility (if available) or test each drive individually on a different hard drive controller (for example, a hard drive docking station or SATA controller).</li><li>2. Replace the failed drive with an identical hard drive.</li></ol> <p>The array will rebuild and is accessible during the rebuilding process.</p>
RAID 3	Single drive failure will rebuild.	<ol style="list-style-type: none"><li>1. Determine which drive is defective by using the RAID management utility (if available) or with diagnosis LEDs on the controller or enclosure.</li><li>2. Replace with an identical hard drive.</li></ol> <p>Note: Do not change the order of the drives.</p> <ol style="list-style-type: none"><li>3. The array may be accessible during the rebuild, but you should let the controller rebuild without interruption so that performance is not compromised.</li></ol>
RAID 5	Single drive failure will rebuild.	<ol style="list-style-type: none"><li>1. Determine which drive is defective by using the RAID management utility (if available) or with diagnosis LEDs on the controller or enclosure.</li><li>3. Replace with an identical hard drive.</li></ol> <p>Note: Do not change the order of the drives.</p> <ol style="list-style-type: none"><li>3. The array may be accessible during the rebuild, but you should let the controller rebuild without interruption so that performance is not compromised.</li></ol>
RAID 10	Only one drive in a mirrored set can fail .	<ol style="list-style-type: none"><li>1. Determine which drive is defective by using the RAID management utility (if available) or with diagnosis LEDs on the controller or enclosure.</li><li>2. Replace with an identical hard drive.</li></ol> <p>Note: Do not change the order of the drives.</p> <ol style="list-style-type: none"><li>3. The array may be accessible during the rebuild, but you should let the controller rebuild without interruption so that performance is not compromised.</li></ol>

When you troubleshoot issues with a hard drive controller card, there are some quick tests that you can complete to rule out potential problems. You can test to make sure that the following components are working correctly and are not the source of the issue:

- IDE, SATA, and eSATA cables
- Hard drives
- Hard drive controller card

To test your setup components, try the following:

- Use the IDE, SATA, or eSATA cable, hard drive, and hard drive controller card in another setup to see if the problem is with the components or the setup.
- Use a different IDE, SATA, or eSATA cable, hard drive, and hard drive controller card in your setup to see if the problem persists. Ideally, you should test a component that you know works in another setup.

When you test your cables, it is recommended that you do the following:

- Test each cable individually.
- Use short cables when you are testing.

When you test the hard drive and hard drive controller card, it is recommended that you do the following:

1. To open the Device Manager, press the **Windows** key + **R**, type **devmgmt.msc**, and press **Enter**. Check the **IDE ATA/ATAPI controllers** (for IDE) section, or the **Storage controllers** (for SATA) section.
2. Do one of the following:
  - If you do not see the hard drive controller card in **Device Manager**, refer to the following FAQ: <https://www.startech.com/support/faqs/technical-support?topic=expansion-cards#pci-pcie-cannot-boot-os-or-detect-windows>.
  - If the device is listed with an error, reinstall the drivers by completing the instructions on the website.
  - If the hard drive is listed with **unallocated** space, the hard drive needs to be formatted. Right-click **unallocated** and click **New Simple Volume**. Follow the on-screen instructions to complete the reformatting.

**Note:** Formatting a hard drive erases all of the data on it. Make sure that you back up all of your data before you reformat the hard drive.

3. To check **Disk Management**, press the **Windows** key + **R**, type **diskmgmt.msc**, and press **Enter**. Check to see if your hard drive is listed.

4. If the hard drive is listed as **healthy** but does not have a drive letter, for example, C:, right-click **healthy** and click **Change Drive Letter and Paths**. Click **Add**, assign a drive letter, and click **OK**.

**Note:** A formatted hard drive does not show up in **Computer** or **My Computer** until it has a drive letter assigned to it