## Advantages and Disadvantages of using RAID 6 over RAID 10 (or 0+1)

**Raid 10 (1+0) has Better write performance.**

RAID 1+0 imposes only a 2x write performance hit.

RAID 6 makes two parity calculations for each write operation, so it's slower to write than most other RAID levels.

**RAID 6 can always protect against two simultaneous disk failures.**

Because RAID 6 doubles up its parity data, it can withstand two disks failing at the same time. Whether RAID 10 [can handle two disk failures simultaneously](http://searchstorage.techtarget.co.uk/answer/Double-drive-failures-in-a-RAID-10-configuration) depends on where they occur. If both the disks that fail are located in the same mirror, the other set can step in. You will lose all data if the same disks if both mirrors fail within the rebuild window (which should be relatively short, however).

**RAID 10 rebuild times are faster.**

RAID 10 has among the fastest [rebuild times](http://searchsmbstorage.techtarget.com/tip/Five-ways-to-control-RAID-rebuild-times) possible because it only has to copy from the surviving mirror to rebuild a drive, which can take as little as 30 minutes for drives of approximately 1 TB. The key drawback of RAID 6 (vs RAID 10) is that the time it takes to rebuild the array after a disk failure is lengthy because of the parity calculations required, often up to 24 hours with even a medium-sized array.

**RAID 10 doesn't need special hardware.**

Most controller hardware will support RAID 10 with good performance. Because RAID 6 doubles the parity calculations for every write, it requires specially designed controller hardware.

**RAID 6 uses less storage, if you have enough disks in the array.**

A RAID 10 array can only store half the total disk capacity in data. The other half of the capacity is taken up by the mirror. If a [RAID 6 array](http://searchstorage.techtarget.com/tip/Erasure-codes-The-foundation-of-RAID-6-arrays) contains the minimum number of disks (four), then it can only hold half the total disk capacity in data, as well. The difference comes as you add disks. A RAID 10 array still dedicates half its capacity to protection. But the percentage of usable capacity increases as you add disks to a RAID 6 array. If you double the number of disks from four to eight, parity only consumes 25% of the disk capacity and it keeps going down as you add more disks.

**RAID 10 eats up 50% of the drive capacity in mirroring the data.**

The capacity penalty for RAID 6 is much smaller if you use eight or more drives in an array.

**Conclusion**

Which RAID array you choose often depends on what kind of storage you're protecting. RAID 6 is mostly found in installations using SATA drives, especially large-capacity SATA drives in their arrays. There's no technical reason why you can't use RAID 6 with SCSI drives, but there's not much incentive to do so. SCSI drives are generally smaller than SATA drives and they are considered to be more reliable.