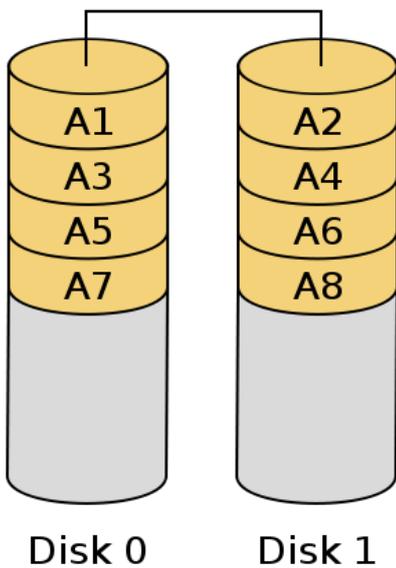


# RAID – Redundant Array of Independent Disks

Information is from Wikipedia. “A” stands for a piece of data, but not necessarily one “byte” or “bit.”

## RAID 0



RAID 0 is the simplest form of RAID, requiring 2 or more disks. The data is split into equal pieces and each piece is written onto the disks. Technically, RAID 0 is not RAID, because the disks are not “redundant.”

The disks each maintain their original size. For example, 2 160GB disks would create an array size of 320GB.

The advantage of RAID 0 is that data speeds are very fast, because each disk only works at a fraction. The disadvantage is that if one drive fails, the entire array fails and recovery is impossible.

This setup used most frequently in gaming computers because it is very fast, and the least expensive since it only requires 2 drives. However, it is important to tell customers that they must ALWAYS have backups of their data.

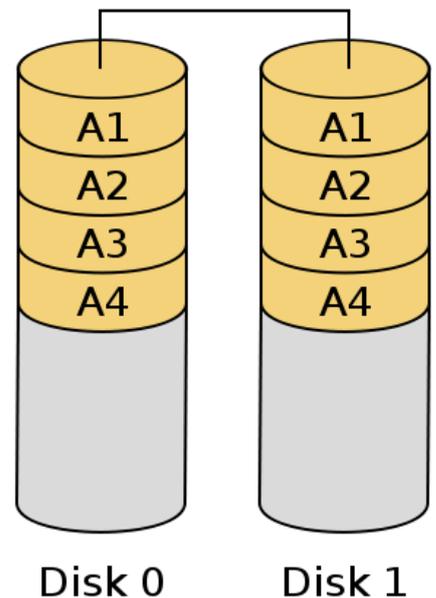
RAID 1 is the best way for home users to be assured that they will always have a perfect backup of their computers. It requires at least 2 disks to implement. Every time that any data is written to the array, the data is written identically to every disk, creating perfect backups.

There is a 50% subtraction of total possible data. For example, if you have 4 120GB disks, your total amount of storage that you could use would be 240GB.

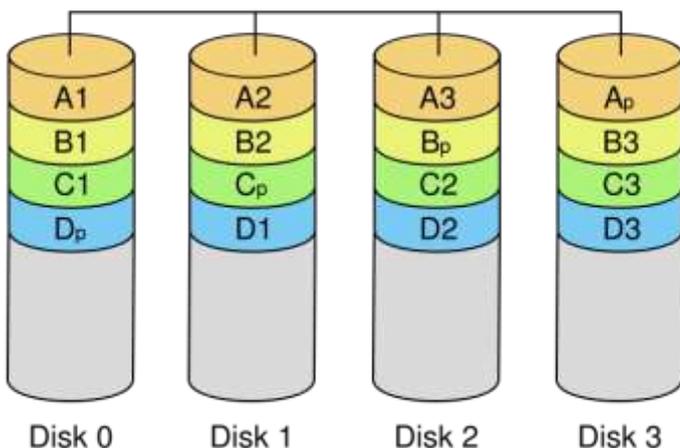
There is no speed gain to RAID 1, because each disk has to work at 100% performance.

While this means that hard drive failure is no threat to data loss, this does not protect against data corruption, or viruses, because it will make perfect copies of the viruses and corruption also.

## RAID 1



## RAID 5



RAID 5 is the preferred method of data storage in servers because of its combination of fast speed and ability to save data. It is also better than RAID 1 because the data penalty is small.

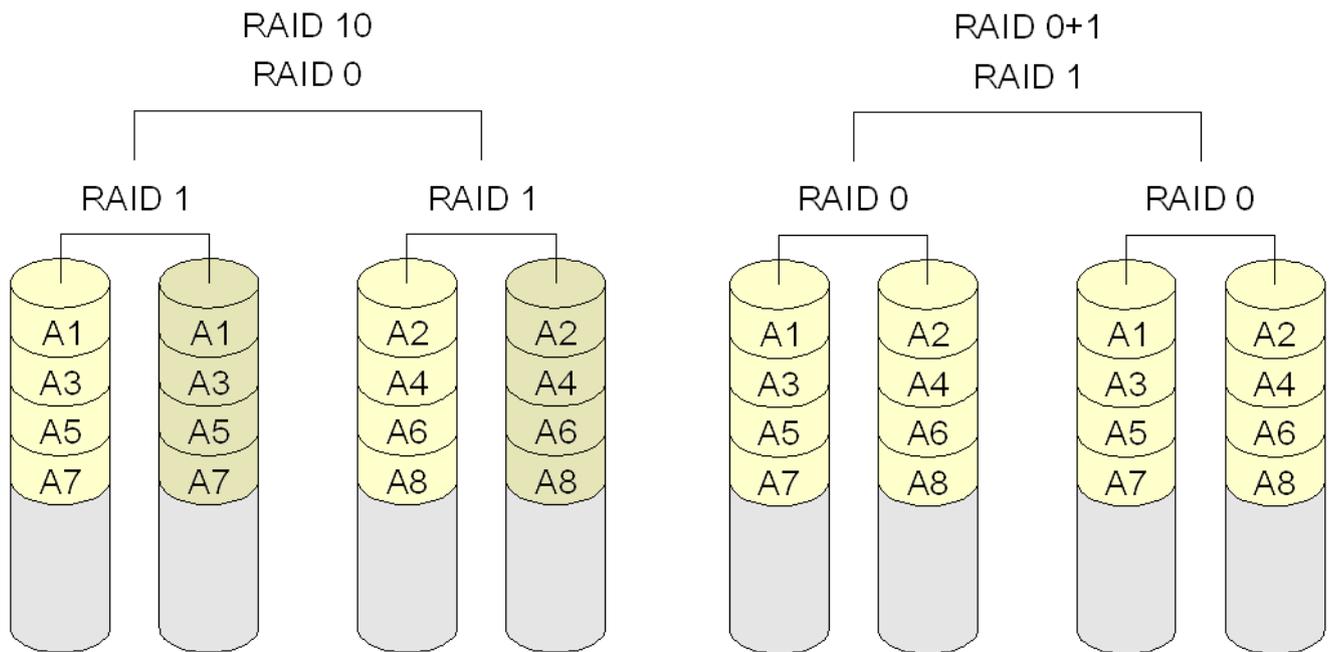
Number of drives \* storage space of one drive – storage space of one drive = total size of RAID array.

Example: 5 drives \* 160GB = 800GB

Subtract 160GB = 640GB total size of RAID.

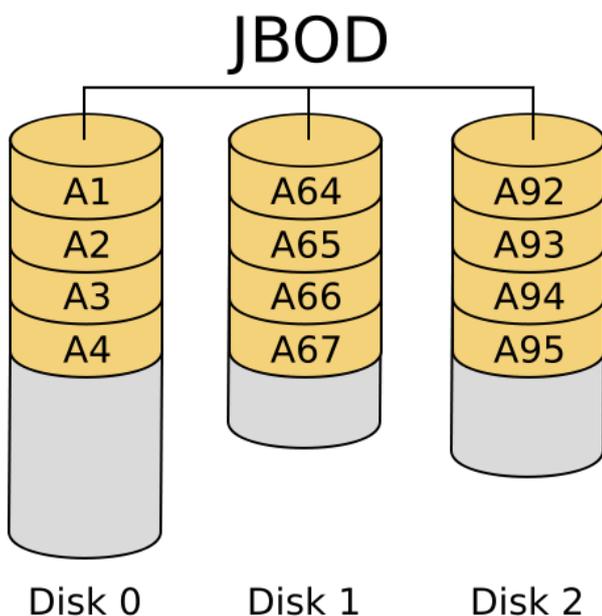
# RAID – Redundant Array of Independent Disks

Information is from Wikipedia. “A” stands for a piece of data, but not necessarily one “byte” or “bit.”



RAID 10 (also called RAID 1+0) and RAID 01 (also called RAID 0+1) are types of “Nested RAID” – multiple RAID arrays that work inside each other. They are older systems, that are usually not used anymore because RAID 5 has replaced them in functionality. There are many different kinds of Nested RAID systems, like RAID 50 (RAID 5+0) and RAID 100 (RAID 10+0) that work the same way, but are very rarely seen except in high-level servers. Especially with RAID 100, the cost of purchasing enough hard drives to run the system (at least 8) means that it is considered a waste of money when RAID 5 can do the same job almost as well.

## JBOD – Just a Bunch Of Disks



Technically, JBOD is not a type of RAID at all, the same that RAID 0 is not RAID. In this situation, the RAID chip merely looks at all of the different hard drives plugged into it, and then makes the computer view it as a single large drive. This type of array can use any size hard drive. For example, if I have an 8GB, a 20GB, and a 60GB drive in my house, I can use JBOD to make my computer think that I have an 88GB drive plugged into my computer.

JBOD is not used very often anymore, because the low cost of hard drives means that people are more likely to throw away their old, small-size hard drives and just buy a larger one. However, it was quite common in the mid 1990's.