

Redundant Array of Independent Drives (RAID)

RAID – Definition and Common Forms

A RAID, or “Redundant Array of Independent Drives,” is a powerful tool for managing data storage. RAID environments allow servers to utilize multiple drives to achieve different objectives, including greater storage space and reliability than can be achieved with a single drive. A RAID is set up by using a hardware controller or advanced server software to control multiple drives simultaneously and to specifically define their roles for how the data is managed.

RAID 1

The simplest RAID configuration is RAID 1. In a RAID 1 setup, two drives are mirrored together with a live replica of the same data. If one drive fails, the system will automatically continue running on the mirrored drive, preventing a production outage. This provides a high level of redundancy for protecting against data loss at a relatively low cost. RAID 1 only requires two drives, therefore making it an extremely attractive solution for rack-mountable servers.

RAID 5

While RAID 5 has the most complex controller design, it is the most versatile of the RAID configurations. The most common RAID 5 configuration has four drives with the data spanned between all of them. This provides for the highest data read rate, as well as an

extremely high level of uptime reliability. If any one drive fails, a built in spare drive kicks in and the array is rebuilt. The failed drive is replaced and becomes the new spare, without any downtime or production outages.

While more expensive than RAID 1, the versatility of RAID 5 makes it a great choice for the widest range of applications.

Call the Experts

While these RAID configurations offer a high level of performance, redundancy, and security for the data on a production server, they are not a backup solution. The right RAID for your situation will protect you against a hardware failure, but cannot guarantee against software corruption or data loss. These systems work together in tandem with your backup systems and provide the foundation for a sound disaster recovery plan.

If you have not developed a backup and disaster recovery plan, be sure to have an expert review your configuration and check for redundancy and reliability. A proactive approach to data backups is always easier and less costly than dealing with a disaster.

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