

RAID DATA PROTECTION

FOUR REASONS SMALL-TO-MEDIUM BUSINESSES SHOULD INCLUDE RAID IN THEIR DATA PROTECTION STRATEGY



WHAT IS RAID?

The most likely component to fail in any computer is the moving part – the hard drive that is spinning anywhere from 5400 RPM to 10,000 RPM. RAID (Redundant Array of Independent Disks) is a redundant system that uses multiple hard drives to store your data, so that even if one drive fails, your data is still safe and accessible.

Redundant systems are used in all kinds of critical applications where failure would be disastrous, such as aircraft control systems. Similarly, a redundant disk system could save your business from critical data loss and therefore should be considered in any small business data protection scheme.

DIFFERENT TYPES OF RAID ON THE MARKET

<p>RAID 1—The same data is written to 2 drives. If one drive fails, your data exists and is readily accessible. The useable capacity will be half of the physical capacity of the drives.</p>	
<p>RAID 0—Careful, this offers no additional protection. Data is simply written to multiple disks as if they were one. If one of the drives fails, all data is lost. Usable capacity will be the same as the physical capacity of the drives. RAID 0 is not recommended for data protection.</p>	
<p>RAID 5—Data is written across all the drives along with extra information (called parity) such that your data can be retrieved if any one of the set of drives fails. A RAID 5 storage device requires a minimum of 4 drives. Usable capacity will be the physical capacity less one drive.</p>	
<p>RAID 6—Data is written across all the drives along with parity information such that your data can be retrieved if two of the drives fail. A RAID 6 storage device requires a minimum of 4 drives. Usable capacity will be the physical capacity less 2 drives.</p>	
<p>RAID 10—A combination of RAID 1 and RAID 0. In this case, data is mirrored and then striped across all the drives. Usable capacity is half the physical capacity of the drives.</p>	

FOUR REASONS FOR RAID PROTECTION

1. Protect critical data—Your business would likely suffer significant losses, or even fail, if you lost critical data. What's more, some businesses are required by regulation to protect their customer or patient data. The right raid solution will protect your critical data.
2. Minimize disruptions—While data backup is a must-have for small businesses, system restores are time-consuming and can disrupt business operations. With RAID protection, however, your business can usually keep operating without interruption.
3. Ensuring business continuity—RAID ensures business continuity when a component in your computer fails, while backup/restore ensures business continuity when the entire system fails.
4. Affordability—The cost of high-capacity hard drives has made redundancy more affordable than ever.

Simply put, RAID gives you the time to take action and keep your business moving forward in the event of a hard drive failure.

TWO WAYS TO IMPLEMENT RAID STORAGE

NAS – Network Attached Storage puts the storage outside the computers in a separate appliance typically attached directly to a router. NAS devices are ideal for small businesses because they are simple to install and configure. NAS storage appears as additional folders available for use by all of the computers on the network.

SAN – Storage Area Network systems include RAID protection and are typically used for database or high performance storage requirements. SANs can be iSCSI or Fibre Channel attached (not appropriate for most small businesses). SANs typically require a dedicated storage network, and looks like raw disks to the attached computers.

STORAGE BEST PRACTICES

- Always back up your data, whether or not you have a RAID array. In addition, you should have a business continuity plan in the event of a physical disaster.
- Implement an alert system for drive failures. Emails or SNMP are fine.
- Always have a spare drive on hand if your system supports user-replaceable drives.



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