whitepaper

Not If, But When

Your business data is important—but could you live with a disk drive crash? Try this: come into work Monday morning and don't turn on your PCs. How will you recover? Everyone will stare at you. It's the same look that will be there when a disk drive crashes: "I hope you have a plan for this."

The reality is, most people wait until it is too late – when there is a real need to check the date of their most recent back up. If their strategy is based on removable media – CD, DVD or Zip – some data is frequently lost, and not easily recoverable. Automated back up to a hard disk is faster, more reliable, and performs recovery much quicker than other media. But what will you do when that drive fails? "These things never fail," you say. Really? Why are you backing up in the first place? "What are the odds?" Better than you think. Most drives will fail within 3-5 years of initial use, and many before that. The new, larger drives run hotter (heat kills drives), at a higher density (allowing less room for errors), and the relentless pricing pressure (to make things cheaper) has had a tendency to take the safety margin out of drives. It is not a matter of *if* your drive will fail, but *when*. How you prepare for that absolute certainty will determine the impact of that drive crash.

RAID

Fortunately, the techno-geeks have been thinking about this for a long time. It's called RAID[1], a technology that has been proven for years in enterprise storage centers. It's a series of standards on ways to configure two or more disks that increase performance, reliability, and capacity. And now your business can afford to buy and use it.
It works like this – with a bunch of disks you can configure:

- **RAID 0:** Increases throughput performance by spreading data across two or more drives. But like a highly-tuned European sports car, it may be fast but it is less reliable than a single drive. And, when one drive goes, you lose everything.
- **RAID 1:** Increases reliability by writing everything to two disks at once. Very safe, but only half of the total drive capacity is effectively available to you. The cost per gigabyte is more expensive because everything is doubled up.
- **RAID 1+0:** This mode provides the reliability of RAID 1 with the speed of RAID 0. But just like that European sports car, the cost of insurance is high. Only half the total drive capacity is available to you – the cost per gigabyte is more expensive because everything is doubled up.
- **RAID 5:** The ideal combination of performance, safety, efficiency, and overall capacity. By writing data and error checking (parity) information across three or more drives, RAID 5 continues operating even when one of the drives fails. When a drive fails, simply replace the failed drive, and the new one automatically is rebuilt to once again offer the same protection and restore your data. More efficient than other forms of RAID – three of four drives are working for you, giving you a 50% increase in capacity, and your data is protected from a drive failure.

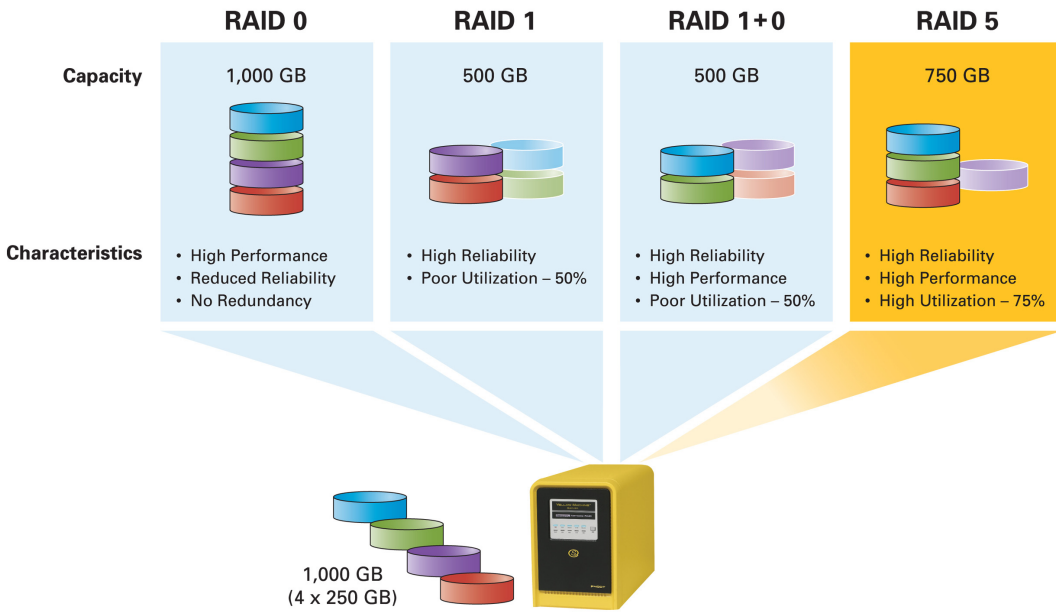
For most businesses and consumers, RAID 5 is the answer. You get more capacity, good performance, and excellent reliability. And when a drive fails, you don't lose data – work continues as usual. You swap in a new drive for the old one. It's just that simple.

How RAID 5 Works

When a computer saves a file to disk, it is divided up and written to different places (called sectors) on the drive. RAID 5 works much the same way, except the parts of a file are written to each of three disks. For safety, a little extra data (called parity) is written to a fourth disk, which is used to recover the data if any of the disks fail.

[1] RAID stands for redundant array of inexpensive disks.

Here's a simple analogy: You save a one-page document to a four-drawer filing cabinet by tearing the document into three strips and putting each one in a separate drawer. In the last drawer, you put brief information (similar to a picture) on how to reconstruct any of the other three page strips. If any of the four drawers no longer work, or the contents destroyed, you can still get a complete document. A RAID 5 disk array works the same way – where each file is divided into smaller strips, and saved to each drive (drawer).
When a single drive fails, no data is lost. The RAID system will automatically recreate your file – it's a backup plan you can depend on.



Using the Yellow Machine

The Yellow Machine makes it easy to use RAID 5 – it's set up right out of the box. Plug it into the network and spend a few minutes using the Set-Up Wizard to configure it. Now you have a back up plan you can count on.
What else does the Yellow Machine do for you? Glad you asked.

- **Easily share and access your data:** The Yellow Machine can be connected to your network (wired or wireless) and is as easy to use as your C: drive by mapping the drive from any PC or Macintosh.
- **Automatically backs up data:** Transfer data from PCs to the Yellow Machine automatically, as often as you like – daily, weekly, monthly. The Yellow Machine can even have mail sent to you when it's done, so you know the answer to the question: "When was the last time we backed up our data?"

- **Develop a disaster recovery plan:** Once you have installed a high performance backup strategy for your computers, the next step in data protection is to backup your files in an offsite location. Due to its' portable size, the Yellow Machine can serve in this role, too.
- **Shares the broadband Internet connection:** The built-in router and 8-port switch allows you to directly connect 8 PC's to share files or Internet access. You can also connect more switches to expand your network.
- **Protects your data from unauthorized use:** Passwords protect sensitive data from prying eyes.
- **Protects your network:** A built-in firewall keeps out intruders. Yellow machine uses a hardened Linux OS, further protecting data from those pesky Windows viruses.
- **Comply with government regulations:** The government is getting serious about how computer data is protected. With the Yellow machine, you can be serious, too. Protect data with passwords. Make copies of all e-mail. Lock out intruders.
- **Control your network:** Built-in networking features let you control who has access and block access to specific web sites. Maximize your employee's productivity.

Want to know more details? Contact your Anthology Solutions Reseller, visit our website at http://www.yellowmachine.com/, or give us a call at 877-936-5600– we have operators standing by.