RAID? For Your Servers?

Everyone knows that to get the most out of your PC you need a fast processor, a good amount of memory, and good components. RAID (or Redundant Array of Inexpensive Disks) uses multiple hard drives setup in a special way to give yet another way to enhance the performance and/or fault tolerance of your system. There are several levels of RAID which are built upon some basic principles.

RAID level 0 involves disk 'striping'. This involves having two or more disks that share the duty of having data written to it. This is done by splitting data into segments and alternating which drive it is written to. This greatly improves system performance because, in simpler terms, it is like having two cars drive two miles compared to one car driving four miles. It takes half the time to cover the same distance. This will not help should any of the disks fail, since the data is 'striped'

onto both drives, but helps greatly in such applications as video and picture editing and gaming.

Another level of RAID, level 1, involves writing the same data to two disks simultaneously. The main benefit of this is fault tolerance – should one drive fail, then the other one can be booted from and all data is still intact. System performance suffers a bit since the same data needs to be written to both drives instead of one, but the peace of mind this brings often outweighs the performance hit.

There are several more levels of RAID which use combinations of these types and extend on them. Many servers use level 5, which stripes the data (as in level 0) across

two or more drives. There is then another extra drive that keeps an inventory of sorts of what is on each of the other drives. Performance is very good due to the data striping, and a drive can be rebuilt from the information on the 'inventory' drive should one of the other drives fail. Other levels of RAID are quite advanced and can be seen online at: http://www.acnc.com.

To implement a RAID setup it is recommended to acquire a RAID controller card. Some computer workstations come with this ability from the factory but need to be configured properly for it. Servers above the basic level generally come with RAID already configured. It is good practice for any server to have at least a RAID 1 configuration, and if the budget allows RAID 5 is preferred. This fault tolerance combined with daily tape backups guarantees a high level of data security.

Battery Backups: Saving Data and Time

Almost every office has lost power at one time or another. When this happens, people lose all of their unsaved work and it could potentially damage their computer. A battery backup is used to protect your unsaved work and your computer by keeping your computer running during a power outage. A lower end battery backup will keep power running to your computer long enough for you to save what you are working on and to shutdown properly. Higher end battery backups can keep your computers running for a prolonged period of time after the power goes out so that you can continue to work and not lose valuable time.

The best way to be protected in the event of a power outage is to have three hardware areas on battery backup. First, of course, would be to have any workstations you would like protected on a battery backup. Next would be making sure your server is on a battery backup. Lastly, your network equipment you use to connect to your server should be on a battery

backup. With these three areas covered, you can be sure you will have time to save data during a power outage, and possibly continue working for extended periods of time.
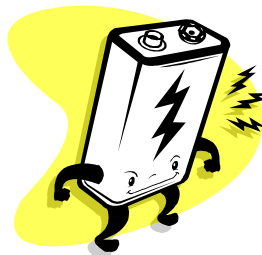
In the case of a power outage when nobody is in the office, software that comes with

your battery backup will automatically shutdown your computer and server for you if the battery is about to run out. When the power comes back on, the battery backup will turn the systems back on also. Without battery backups, a power outage will simply cause your computers to turn off immediately. This would not only result in the loss of unsaved work, but often times can cause hardware failures. Battery backups are a cheap and efficient way of protecting your company's computer systems, and no company should be without them.