Re: RAID & /boot

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From: Steve Kirkendall (*skirkendall_at_dsl−only.net*)
Date: 01/14/04

Date: Wed, 14 Jan 2004 11:05:32 −0800

SR wrote:
> *Hello everybody,*
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> *a customer has just asked me to get him a server for storage and backup.*
> *The box will be equipped with 3x250 Gb IDE hard disks, that I'd like to*
> *configure with software RAID 5 under SuSE 8.2 Pro. I understand it is not*
> *possible to include the /boot partition in the RAID array, and neither it*
> *is possible to store it on a floppy because the size of the kernel exceeds*
> *1.44 MB.*

I have a few of comments to make...

First, although GRUB can't boot from a RAID partition, LILO can. If you try to install SuSE onto a RAID partition, it will automatically use LILO as your bootloader, and give you a scary−sounding warning. It seems to work fine other than that, as far as I can tell.

Second, Linux does RAID on partitions, not whole disks. If you don't feel comfortable booting from a RAID partition, then simply create a separate partition for booting. For example, you could build a 6GB partition that contains all the standard Linux files, and use 244GB for a RAID array that you mount on /home to store user data. Set up each drive that way. You could put a copy of the 6GB partition on each drive so that if one fails, you can bring the system up again by moving cables. (Or even by selecting "Other Linux" from the boot menu. When I used SuSE to set up disks this way, it added an entry to the default boot menu for booting from the non−RAID partition on the second drive −− before I even put a bootable copy of Linux there.)

For a variety of reasons, it's a good idea to put each hard disk on a separate controller. Most motherboards only have two IDE controllers, so you should probably plan to plug in an extra IDE controller card. Sometimes Linux tries to shuffle the /dev names for the drives when you do that; if that's a problem, there's a kernel parameter you can use to prevent it. "ide=reverse", if I recall correctly.

Alternatively, you might consider using disk mirroring with the third disk as a spare. You would loose storage capacity, obviously, but you'd

gain a little performance and might be able to avoid adding a an extra IDE controller card. The two active disks should be master disks on separate controllers, and the spare can be a slave. HOWEVER if the master drive's electronics or cable fails, then the spare will be inaccessible, so this isn't the ideal solution. The CDROM drive could be a slave on the other controller, but it's hard to find a UDMA−133 CDROM drive so this could reduce the performance of the /dev/hdc hard disk.

I haven't found an arrangement that I'm 100% satisfied with.