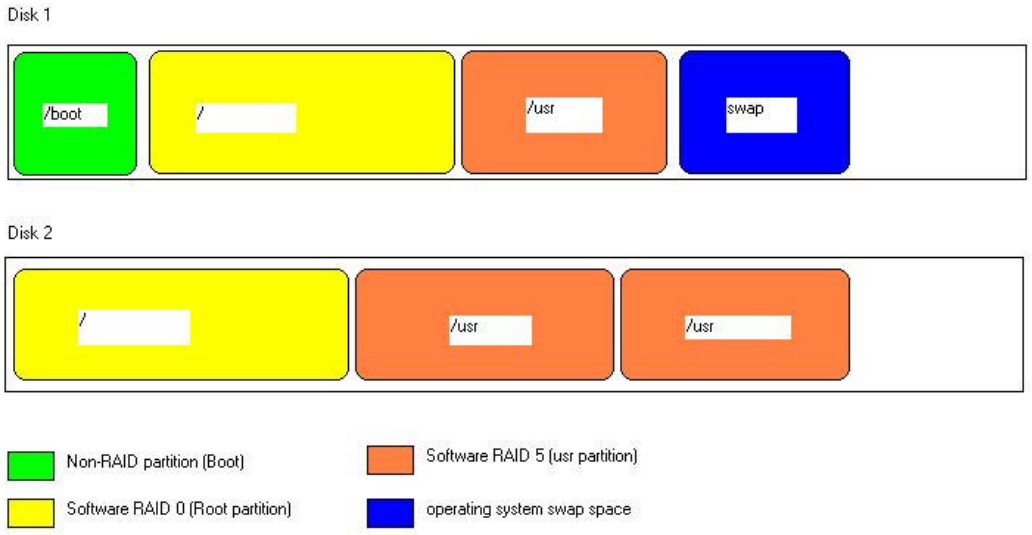
IDE/RAID: Linux RAID

Linux offers RAID functionality through software.

- Linux now supports software RAID levels 0, 1, and 5.
- Linux can boot off of software RAID 1 set. Current versions of lilo will write the boot sector information to both disks of a RAID 1 set automatically.

The Linux RAID imposes a noteworthy limitation. Linux cannot boot from a RAID 0 or RAID 5 partition. This restriction can be easily worked around through allocation of a RAID 1 or non-RAID /boot partition. The following figure demonstrates the approach.



The figure shows two physical disks, Disk 1 and Disk 2. Disk 1 contains a "/boot" partition shaded in green. The two yellow root partitions "/" make up a software RAID 0 set. The three orange partitions for the "/usr" volume make up a software RAID 5 set. While multiple partitions can be created on each drive to support a RAID 5 set across two physical disks, this configuration is primarily intended for demonstration and is not recommended. If example Disk 2 fails, the "/usr" volume will become inaccessible. Finally, the figure shows blue, "SWAP" partition. This partition is needed by the operating system and is not user accessible.

Because Linux does not have a RAID management GUI, the health of the RAID set must be monitored manually with a review of the /var/logs/messages file.

Red Hat has an article to further explain software RAID setup. Please see:
http://www.redhat.com/docs/manuals/linux/RHL-9-Manual/custom-guide/ch-software-raid.html.