

3Ware 7500-4 Based IDE RAID Array Throughput:

Real measurements of data transfer rates for different RAID configurations using a 2 gigabyte test file on a mounted file system. Your mileage may vary.

3Ware 7500-4 4 Port IDE-133 Raid Controller with
4 by 40 GB IBM 7200 RPM 2M Cache ATA-100 Disks

On board ATA-100 Primary Master Controller with
1 by 160 GB Maxtor 5400 RPM ATA-133 Disk with 2M Cache

System:

1 by AMD MP1800+ CPU
512 MB DDR266 CL2.5 Netlist Memory
Tyan S2466N-4M MB, BIOS Rev 4.03
2U Enclosure with all drives mounted in removable IDE shuttles
460 Watt ATX PFC Power Supply
Red Hat Linux 8.0, 2.4.18-18.8.0 standard single processor kernel

bonnie-1.2 –O2 (compile options) Bonnie –s 2000 (command line) (Uses a 2GB file for all tests)	160 GB 5400 RPM Maxtor 2M\$	RAID 5 4 x 40GB 123GB	RAID 10 4 x 40GB 80GB	RAID 0 4 x 40 GB 160 GB
Write with putc (KB/Sec)	12393	11537	12958	12755
Rewrite (KB/Sec)	6249	10437	39417	64247
Write Intelligently (KB/Sec)	20085	15007	86760	124555
Read with getc (KB/Sec)	13730	17728	20347	20699
Read Intelligently (KB/Sec)	23673	139825	101617	164838
4Kb Random Seeks (Seeks /sec)	96.2	251.8	315.2	347
hdparm -t (64KB Read) (MB/Sec)	34.9	98.7	51.5	103.4

Conclusions:

- 1) hdparm is extremely misleading!
- 2) How you plan to use your system determines the best configuration.
- 3) Trade-offs between performance and reliability or data security must be considered.

We ended up using a RAID 10 configuration as listed above as we will be using the system as a file server for both reads and writes.

Call us for more information or to discuss your application requirements.