

1. RAIDs

Disk 0	Disk 1	Disk 2	Disk 3
0	1	2	3
4	5	6	7
8	9	10	11
12	13	14	15

N disks

disk = address % N

offset = address / N

Figure 38.1: RAID-0: Simple Striping

Disk 0	Disk 1	Disk 2	Disk 3
0	0	1	1
2	2	3	3
4	4	5	5
6	6	7	7

disk1 = (address % (N/2)) * 2, disk2 = disk1 + 1

offset = address / (N/2)

write to both disks,
read from even-numbered disk for even offsets,
read from odd-numbered disk for odd offsets.

Figure 38.3: Simple RAID-1: Mirroring

Disk 0	Disk 1	Disk 2	Disk 3	Disk 4
0	1	2	3	P0
4	5	6	7	P1
8	9	10	11	P2
12	13	14	15	P3

Figure 38.4: RAID-4 With Parity

Disk 0	Disk 1	Disk 2	Disk 3	Disk 4
0	1	2	3	P0
5	6	7	P1	4
10	11	P2	8	9
15	P3	12	13	14
P4	16	17	18	19

Figure 38.7: RAID-5 With Rotated Parity