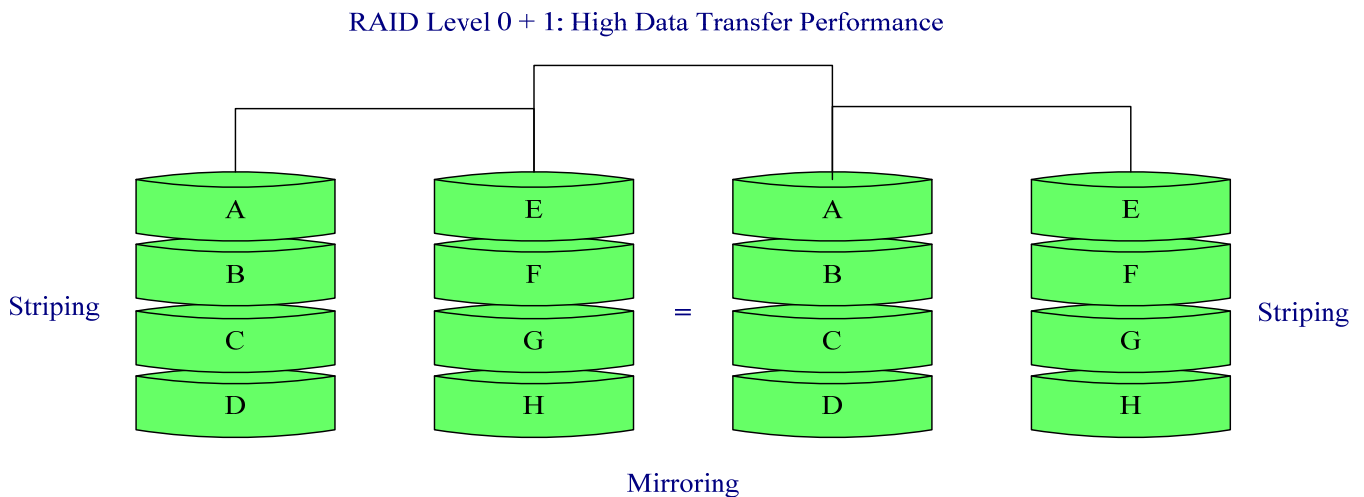# RAID Level 0 + 1: Striping and Mirroring

Also called RAID Level 10
- Combines mirroring and striping
  - Data is striped over the data disks
- Parallel I/O for high throughput (full disk array bandwidth)
  - Each data disk is copied into a mirror disk
- Writes require 2 I/Os – (original disk + mirror disk)
- Blocks can be read from either original disk or mirror disk
- Better performance since more parallelism can be achieved
  - No need to wait for busy disk, just go to its mirror disk!
  - Space utilization is 50% (half data and half copies)
- RAID Level 1+0 is better than RAID 1 because of striping
- RAID Level 1+0 is good for workloads with small data sets, where cost of mirroring is not an issue.
- Also good for workloads with high percentages of writes, since a write is always 2 I/Os to unloaded disks (specially the mirrors)

RAID Level 0 + 1: High Data Transfer Performance

Striping

Striping

=

Mirroring

Excellent solution for sites that need high performance but are not concerned with achieving maximum reliability

Very limited scalability at a very high inherent costRAID Level 0+1: Striping and Mirroring
- Combines mirroring and striping.

Data is striped over the data disks.

Parallel I/O for high throughput (full disk array bandwidth)

Each data disk is copied into a mirror disk

Writes require 2 I/Os – (original disk + mirror disk)

Blocks can be read from either original disk or mirror disk
- Better performance since more parallelism can be achieved.
- No need to wait for busy disk, just go to its mirror disk!