

# RAID performance levels

If you still want to exert control over your data placement on disk, here are some RAID attributes to consider. Remember that every combination of hardware and software, not to mention cache sizes, block sizes and other configuration variables, can have a major impact on performance.

RAID level	Number of drives*	Read performance	Write performance	Rebuild performance**	Protection***	Capacity reduction****	Applications
<b>0</b>	2	High	High	N/A	N/A	0%	CAD, CAE, media editing, "Scratchpad" NAS, anything that requires maximum performance but can be re-created easily
<b>1</b>	2	Medium-High	Medium-High	High	1	50%	Simple mirroring, great for "appliance" servers
<b>0/1 (or 10)</b>	2	High	High	High	One per pair	50%	Very expensive; use for OLTP, journaling file systems, large Exchange stores
<b>5</b>	3	High	Low-Medium	Low	One per group	7% to 34%	Good, general-purpose level; write caching helps; use for NAS, systems of record
<b>6 (or Double Parity)</b>	4	High	Low-Medium	Low	2	13% to 50%	Best for large disks; data warehouse, archive, backup target
<b>50</b>	6	High	Medium-High	Medium	One per group	7% to 34%	Striped or interleaved RAID 5; Enterprise NAS, SQL, Exchange
<b>60</b>	8	High	Medium	Medium	Two per group	13% to 50%	WORM disk, long-term, nearline retention; same as RAID 6 but better performance

\* Number of drives is the minimum number of physical spindles required to implement the level.

\*\* Rebuild performance is a relative measure of how a RAID group will perform as a replaced drive is being re-striped with data.

\*\*\* Protection is the number of drive failures in a RAID group that can be sustained in a drive MTRR period without loss of data.

\*\*\*\* Capacity reduction is the "cost" of using this RAID level vs. the raw disk space.