WildFire Storage

More performance. Less hardware. Lower cost.

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Software RAID for SSDs · Linux kernel module

# maxRAID

## RAID, rebuilt for flash.

**WHY IT'S DIFFERENT**

**Every write becomes a full, sequential stripe — so parity RAID runs faster than mirroring, and SSDs last years longer.**

Available now

**3.2M**
random writes per second, vs 1.0M for RAID-10[1]
**Busy databases stay fast. No mirroring required.**

**5+ years**
with no SSD replacements[2]
**Buy once. No refresh for five years.**

**7 vs 16**
SSDs for 120 TB usable, vs RAID-10[3]
**Less to buy. Less to power. Less to replace.**
As few as 5 with highly compressible data.

**$40K vs $141K**
five-year SSD cost for 120 TB, vs RAID-10[3]
**$100,000 back in your budget — before compression.**

### What you get

**Write linearization.**
Random writes become large, aligned sequential writes across every SSD.

**Fast parity.**
No read-modify-write. Parity is computed in memory and written once per stripe.

**Inline compression.**
Blocks are compressed before they are written — more capacity, less wear.

**Near-theoretical garbage collection.**
Write amplification within 0.5% of the optimal model.

**Flexible parity.**
From single to N-1 parity, including 3- and 4-drive protection.

**Predictable as it fills.**
Keep some free space for the best results — we recommend about 80% full.

### Specifications

| | |
|---|---|
| Form | Linux kernel module, standard block device |
| Linux | RHEL 8, 9 (and select Rocky, AlmaLinux); Ubuntu 22.04, 24.04 LTS; custom kernels |
| Media | QLC, TLC, MLC, SLC; data-center and consumer SSDs |
| Works with | File systems, LVM, partitions, swap, TRIM/discard |
| Best for | Moderate to high write workloads (≥ 0.3 drive writes per day) |

| | |
|---|---|
| RAID levels | Single SSD, RAID-0, -1, -5, -6; 3- and 4-drive parity |
| Interfaces | SATA, SAS, NVMe; fabric targets such as iSCSI and NVMe-oF |
| Block size | Presents 512 B or 4K; can issue 4K-only I/O to drives that require it |
| Snapshots | Via LVM or snapshot-capable file systems on top of maxRAID |

**Try maxRAID free for 120 days, on arrays up to 100 TB.**
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1. Measured: 4K random writes, six 3.75 TB NVMe SSDs, maxRAID-5 (5+1).
2. Modeled: 120 TB on 15 TB SSDs, same heavy-write workload; RAID-5 SSDs last about 20 months, RAID-10 about 36.
3. Modeled: 120 TB on 15 TB SSDs, one parity drive. SSD count with data 30% compressible (no compression: 9; 60%: 5); five-year cost with no compression, drive costs only.

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