

p4-cache

Cut Perforce storage costs by 60-80%.

Without changing a single developer workflow.

What it is

p4-cache is a userspace daemon plus an LD_PRELOAD shim that transparently tiers cold Perforce depot files to Azure Blob, AWS S3, Google Cloud Storage, or NFS — and rehydrates them on demand, fast. Hot data lives on commodity NVMe you already have or can buy for a fraction of array prices. No p4d patches. No protocol changes. No client software. Your developers don't notice. Your storage bill drops.

The numbers

Customer	Depot	Current cost/yr	Savings/yr	Payback
Cloud studio	80 TB on Azure Premium	\$192,000	\$100,000	8 months
Mid enterprise	200 TB on NetApp	\$900,000	\$624,000	3 months
Large enterprise	1 PB on NetApp	\$4,500,000	\$3,446,000	< 2 months
Multi-PB	2 PB on NetApp	\$9,000,000	\$7,011,000	< 1 month

Plus avoided refresh CapEx for enterprise customers — typically \$2-3M every 4-5 years.

Why this works now

- 5-15% of any Perforce depot is read in any 30-day window. The other 85-95% pays enterprise-storage prices for no operational reason.
- Commodity NVMe at \$40-80/TB acquisition is now fast enough to replace enterprise SAN for Perforce workloads.
- Object storage runs \$24-\$150/TB/year — 15-100× cheaper than enterprise arrays.
- p4-cache is the Perforce-aware glue: transparent to p4d, BLAKE3 content-verified, forensic-watermarked, audit-logged, production-hardened.

Production-grade. Audited. Real.

~36.5K-line Rust workspace, six crates (daemon, shim, shared, license, license-tool, integrity-stamp). Three independent code audits, all engineering findings closed. Zero open HIGH or CRITICAL findings. Workspace-wide compile-time defenses against entire classes of bugs (Rust edition 2024). BLAKE3 content verification end-to-end. Forensic watermark on every cold-tier write so a leaked blob is traceable. Three SCM_CREDENTIALS / SO_PEERCREATED UID allowlists. Capabilities dropped after startup. Fuzz harnesses on the protocol parsers. CI gates on cargo audit and cargo deny.

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rusty@rcjacksonconsulting.com rcjacksonconsulting.com