CQDAM Free Edition v1.0

■ LAMINAR INSTRUMENTS ■

Ultra-fast, zero-frills in-memory key–value & counters (RESP compatible)

What it is

CQDAM Free is a tiny, single-binary cache/counter server that speaks a compatible subset (RESP). It's built for one thing: *raw speed* for hot paths where you don't need durability or heavy features.

Why teams use it

- **Blazing fast read/write cache** for hot objects, feature flags, dedupe/idempotency keys.
- **Real-time counters** (rate limits, hits, impressions, metering).
- **Fan-in/fan-out buffers** and request coalescing keys to shave tail latency.
- **Drop-in with compatible clients** (same wire protocol for supported commands).

What customers can do today (Free)

Supported commands

- `SET / GET / DEL / EXISTS`
- `INCR / DECR` (atomic)
- `PING / INFO / HELLO / FLUSHALL`

Characteristics

- Case-sensitive commands (uppercase only)
- Pipelining & high concurrency
- Volatile, in-memory only (no persistence)
- Up to 2.5M operations per second

Not included (Enterprise/roadmap)

- Hashes/Lists/Sets/Sorted sets, Pub/Sub, Transactions, SCAN/SCRIPT/EVAL
- TTL/expire, auth/TLS, clustering, observability, SLAs

Performance snapshot

CQDAM Free (default port 6379)

`cqdam-benchmark -t SET -n 100000 -c 10 -P 10 -d 64`

2.5M SET ops/sec • p50 **0.025 ms** • p95 **0.085 ms** • p99 **0.125 ms** • max **0.250 ms**

CQDAM Enterprise (internal benchmarks)

Sustained 7M+ RPS on `SET/GET/INCR` with sub-millisecond p95 under high concurrent load (500+ clients with pipelining). Enterprise-grade performance for mission-critical workloads.

> Benchmarks are on loopback with pipelining; real-world results vary by hardware, payload size, client behavior, and network conditions.

Quick start (60 seconds)

./cqdam_free --port 6379 &

cqdam-cli -h localhost -p 6379 PING

cqdam-cli -h localhost -p 6379 SET validation "works perfectly"

cqdam-cli -h localhost -p 6379 GET validation

cqdam-cli -h localhost -p 6379 INCR counter

Use any compatible client; just keep to the supported commands and enable pipelining for max throughput.

Where CQDAM Free shines

- Latency-sensitive services needing **microsecond-class SET/GET**
- **Ephemeral** caches and **atomic counters** where loss on restart is acceptable
- Sidecars for **per-pod** hot data (K8s), local development, CI performance gates
- High-frequency feature flags and configuration caching
- Real-time rate limiting and quota enforcement

When to use Enterprise instead

- You need **TTL/expiry**, **durability**, **security (auth/TLS)**, **observability**, or **SLA support**
- Multi-tenant, internet-exposed, or regulated workloads
- Horizontal scale/clustering or multi-region patterns
- 7M+ operations per second performance requirements
- Advanced data structures (hashes, lists, sets, sorted sets)

Positioning & offer

- **Free Edition:** "Speed layer, zero frills" for builders. Simple operational story focused purely on performance.
- **Enterprise (CQDAM Ultra):** 7M+ ops/sec class performance, plus durability/security/ops tooling with professional support.

Sample pricing framework:

- Free: $0 (community edition)
- Professional: $3k/mo per instance (TTL + auth/TLS + basic support)
- Enterprise: $8k/mo per cluster (clustering + advanced features + SLA)
- Custom: Enterprise pricing for Fortune 500 deployments

Integration guardrails (important)

- **Treat as volatile.** Persist important data elsewhere.
- **Run on trusted networks only.** No auth/TLS in Free.
- **Client config:** enable pipelining; stick to supported commands; implement proper error handling.
- **App-level expiry:** use time-bucketed keys + background cleanup jobs.

• **Commands are case-sensitive:** Use uppercase commands only (SET, GET, not set, get).

Architecture advantages

• **Congruent Quantum Data Architecture Method:** Proprietary zero-contention design
• **Single binary deployment:** No dependencies, no complex setup
• **Memory-optimized:** Efficient data structures minimize overhead
• **Protocol compatible:** Drop-in replacement for caching workloads
• **Minimal attack surface:** Focused feature set reduces security risks

Call to action

Spin it up, run the benchmark above, and drop it behind your hottest code paths for a same-day latency win.

For enterprise evaluations, we'll provide a tuned build, workload-matched tests, and migration guidance.

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Powered by Congruent Quantum Data Architecture Method