





The Operational Numerical Gap in Modern Data Infrastructure

Why AI Workloads Expose the Limits of Warehouse, Lake, and Streaming Architectures.

AI and advanced analytics are not “just another” workload. They impose sustained numerical pressure on infrastructure: continuous ingestion, high dimensionality, and deterministic performance requirements.

The Infrastructure Shift

AI and advanced analytics redefine infrastructure requirements.

 <p>WORKLOADS</p> <p>Models require large-scale numerical workloads.</p>	 <p>LAG</p> <p>Data lag degrades model accuracy and decisions.</p>
 <p>COST</p> <p>Costs escalate as volume and dimensionality grow.</p>	 <p>INGESTION</p> <p>Continuous ingestion stresses general-purpose systems.</p>

Today’s stacks were assembled around reporting, events, and storage: not sustained numerical workloads.

- ◆ Warehouses optimize for reporting.
- ◆ Streaming systems optimize for events.
- ◆ Data lakes optimize for storage.

⚠ None optimize for sustained numerical workloads.



The Missing Layer

These workloads require a dedicated operational numerical layer: purpose-built for sustained, high-volume numerical workloads powering AI and advanced analytics.

- ◆ Immediate queryability (no ingestion delay).
- ◆ Deterministic performance under load.
- ◆ Unified real-time + historical data.
- ◆ Multi-year retention without tiering.
- ◆ Predictable infrastructure economics.

⚠ Without this layer, numerical workloads overload warehouses, fragment into streaming pipelines, or accumulate in lakes without operational guarantees.

The Operational Numerical Layer

Purpose-built for sustained numerical workloads, it provides:

- ◆ High-volume, high-dimensional numerics (incl. time-series).
- ◆ Continuous ingestion with unified access.
- ◆ Deterministic performance under sustained load.
- ◆ Storage-efficient multi-year retention.
- ◆ Flat, transparent pricing.

✔ Operating in multi-year, large-scale production environments.

How it Fits

Quasar operates as the numerical backbone of your stack. It provides:

STANDARDS-BASED SQL Analytical + operational workloads.	DISTRIBUTED COMPUTATION Large-scale processing.	INTEGRATIONS Python (Pandas), industrial tooling & historians.
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Deploy in the cloud, on-premises, or embedded. Quasar integrates alongside your existing architecture: relieving operational pressure without requiring replacement.

Request an Operational Numerical Architecture Review

Assess whether your current stack can sustain AI-era numerical workloads without cost volatility or performance degradation.

Contact our sales team: contact@quasar.ai

