A high-performance NoSQL database solution for persistent data

ActiveStorage allows firms to load large amounts of data from disk to memory with lightning fast speeds of over 500 gigabytes per minute. The ActivePivot engine then performs calculations, makes the data available for visualization and analysis, and both tools combine to deliver a complete solution for dynamic and persistent data. As a result, IT teams have a holistic and cost-effective platform for delivering complex insights to the business.

It is particularly suited to data-intensive sectors such as:

- **Financial services**, where regulations are demanding deep historical analysis
- **Retail**, where pricing analysts need to track thousands of stock-keeping units referenced by multiple retailers
A partnership to deliver the best of both worlds

ActiveStorage brings together Quartet FS’ unparalleled in-memory engine with a scalable, high-performance and cost-effective NoSQL solution originally designed by QuasarDB. This combination enables firms that manage large data volumes to reach levels of reliability and speed that were impossible with other setups:

- **Relational databases**: it is difficult to use these to store hundreds of terabytes of data and they are inefficient at housing the numerical simulations needed for VaR, PFE and CVA.
- **Big appliances**: firms can scale up tables and SQL queries but it is prohibitively expensive and performance remains orders of magnitude below native in-memory computing.
- **Distributed processing across clusters**: these are mostly used for storage and struggle to deliver the multi-dimensional analytics and non-linear aggregations that come with in-memory computing.

With ActiveStorage, firms can extend the reach of operational analytics and access an unbeatable data solution.

**Ultra-fast loading of datasets for rapid querying**

In-memory aggregation and analytics is enabling firms to carry out calculations on-the-fly using vast datasets. However, in-memory engines may be hindered by the limitations of the systems from which they pull the data.

Persistent databases have grown considerably and performance hinges on the transferring of data from disk to the memory. Many firms need to look at several terabytes of data at a time - which can take hours to load. ActiveStorage reduces that to a matter of minutes, both at start-up and during usage analysis.

**Rapid access to historical data for compliance**

Historical data has become a valuable resource. Firms, particularly financial institutions, are having to perform queries on information that they used to just archive for occasional use. Reasons for this include:

- New regulatory requirements around CVA, Pnl, attribution and risk models
- The Fundamental Review of the Trading Book, which calls for new ways to stress test Expected Shortfall

The loading time for all this historical data could become a major bottleneck to compliance. ActiveStorage overcomes this by uniting in-memory and persistent database solutions for optimal storage, retrieval and analytics. Firms can also use it to store and quickly recall large calculation results generated by the ActivePivot engine.

**A tool for historical insight**

Companies can extract aggregated data from ActivePivot on a daily basis to keep for historical analysis. ActiveStorage is ideally suited for this task, where companies need to capture and store a long history.

**ActiveStorage in financial services:**

**A cost-efficient approach**

The hardware costs for a full in-memory solution could reach €10 million when dealing with huge datasets. The ActivePivot engine can reduce RAM requirements by 80% while ActiveStorage provides efficient disk storage.

**Supporting occasional use**

Banks performing ad hoc analysis on narrow data sets must load partial data sets for a country, legal entity or counterparty. ActiveStorage, integrated with ActivePivot, delivers a platform to quickly and easily load this scattered information.

**ActiveStorage Features**

- Ability to persist large amounts of data reliably
- Lightning fast data loading speeds of up to 10GB/second
- Optimized ActivePivot connector
- Blueprints for cluster and network deployment
- Unlimited record size
- Multi-entry transactions (MVCC)
- Support for text and binary data formats
- Synchronous persistence

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High Performance Analytics

ActivePivot enables instant analysis of large volumes of complex and dynamic data to assist with timely business decisions.

In an ever-changing world where a real-time response can be critical, ActivePivot is extremely fast, always up to date with the latest events and computes using your own business’s logic. As a result, our superior solution gives a competitive edge to your operations and decision making process.

With a component-based architecture, our software can be deployed at a much lower total cost of ownership compared to other dedicated software solutions. It fits on top of your existing systems, pulling information into memory, and feeding back analysis results within milliseconds to help you develop your business.

It requires limited upfront deployment investment and can be reused for a large variety of business areas across many departments; your effective ROI can thus be increased substantially.

No-SQL distributed key-value store from specialist QuasarDB

- High-efficiency, high-performance memory and I/O management
- Fault-tolerant by design - symmetric peer-to-peer architecture
- Automatic, elastic cluster management for fast deployment
- Well-suited to store vectors and other binary data
- Transactional features for conceptual data-integrity (MVCC)
About ActiveViam

ActiveViam provide precision data analytics tools to help organisations make better decisions faster.

ActiveViam started in 2005 with the vision of leveraging in-memory technology to create an analytics platform where businesses could leverage the largest data sets without restrictions, keep them up-to-date in real time and use them to empower their decision makers.

Our goal at ActiveViam, is to let organisations not only make decisions faster, but better; to not only reach their data, but their potential; to not only see their data, but find their way into the future.

ActiveViam is a privately owned company with offices in Paris, London, New York, Hong Kong and Singapore.

For more information please visit: www.activeviam.com