


Atoti within an elastic cloud architecture

- Improve in-memory analytics capabilities with a best-in-class analytics platform
 - Significantly reduce annual hardware costs
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Chief Technology Officers, Risk IT, and IT managers face increasing pressure to reduce hardware costs while meeting stringent regulatory requirements like BCBS 239 for data aggregation and risk reporting. In-memory computing is the only technology capable of delivering the necessary performance for this task.

Traditional risk analytics, whether in-memory or otherwise, have struggled to fully utilize cloud environments to lower hardware costs due to their unpredictable nature. Regulatory reporting demands instant access to all data, resulting in significant hardware usage.

ActiveViam's risk management solutions leverage innovative technology to operate dynamically in cloud environments, using only the necessary hardware at any given moment without compromising analytics capabilities. This allows IT departments to save millions in hardware costs while enhancing their analytical capabilities.

Atoti, our in-memory data aggregation and analytics platform is trusted by global banks like HSBC, Société Générale, and Mizuho, as well as mid-size organizations and hedge funds for comprehensive front-office and middle-office risk analysis, including market risk, intraday liquidity, and collateral optimization.

"Banks utilizing Atoti in an elastic cloud environment can significantly enhance their analytics capabilities while substantially reducing the total cost of ownership. With Atoti, you achieve superior performance and cost efficiency simultaneously."

— Antoine Chambille, Director
of R&D at ActiveViam

How Atoti Cloud Configuration Works:

Atoti's cloud configuration utilizes pre-aggregated analytics cubes for routine, minute-to-minute use by analysts. New cubes are created automatically within seconds whenever a deeper data dive is requested. These "child" cubes remain small, containing only the specific data slices needed for detailed analysis, and they shut down automatically when no longer needed. This approach minimizes hardware usage while ensuring high precision for any number of simultaneous users.

Atoti achieves this through four key innovations:

Cloud-First Design: Atoti is built with a "cloud-first" approach, enabling dynamic adjustment of hardware capabilities in real-time. This allows automatic starting and shutting down of machines as needed, managed by Kubernetes, ensuring compatibility with AWS, Google Cloud, Azure, or private on premise clouds.

Decoupled Storage and Computing: By separating storage from computing, Atoti utilizes cloud object storage technology to develop extremely fast data loading and parsing systems. This allows the setup of new analytics cubes containing tens of gigabytes of data on demand, available for analysis within seconds. Risk controllers can perform multi-dimensional analysis on virtually any dataset in under a minute.

Multi-Dimensional Analysis Support: Atoti decouples calculation formulas (such as VaR, Liquidity ratio, PnL explain) from data sources (tables, columns, levels of detail). This reduces maintenance costs and ensures consistent application performance at any level of aggregation. Users can load any data source, add more data, and perform calculations on-the-fly on new or expanded datasets without duplicating queries and dashboards.

Optimize using DirectQuery: ActiveViam's DirectQuery allows querying external databases directly without loading data into memory, optimizing hardware usage with aggregate tables, making historical data easily accessible, and maximizing ROI on cloud investments. This hybrid approach combines in-memory and in-database queries, providing flexibility and efficiency. With DirectQuery, Atoti enhances cloud-scale data handling, enabling analysis of both historical and operational data side-by-side. This capability simplifies project deployments, reduces costs, and ensures seamless integration across different cloud providers and on-premises databases.

From the user's perspective, this is completely transparent. It just takes somewhere from a few seconds to one minute to make data available for detailed analysis, free from any aggregation constraint.

Use Case examples

Value-at-Risk (VaR) for Market Risk

Traditional VaR analysis often forces banks to choose between trade-level data over a short period (5-10 days) or book-level data over a longer period (50-100 days), neither of which is ideal. With Atoti, you no longer have to compromise. You can access 100 days of trade-level history for analysis, all while significantly reducing hardware costs. This comprehensive approach allows for more accurate and insightful risk assessments without the need for extensive hardware investments.

Valuation adjustments for credit risk

Analyzing credit risk valuations often involves millions of data points to generate historical views or simulate forward-looking scenarios, which can quickly consume memory and escalate costs. With Atoti, you can access counterparty or netting set data within seconds and perform detailed drill-downs to test valuations seamlessly. This capability ensures comprehensive risk analysis without exponentially increasing your IT budget, allowing for efficient and cost-effective credit risk management.

Liquidity Risk Stress Testing

Liquidity risk stress testing requires precise qualification and tagging of every asset, with multiple attributes for each, to accurately deliver LCR and NSFR figures. Ideally, a 60 to 100-day history at the most granular level is needed, but analysts often settle for just 5 to 10 days. Atoti removes these limitations by loading data on-the-fly and making it available for immediate analysis. This approach ensures comprehensive and precise liquidity risk stress testing without compromising on data granularity or historical depth.

"Large scale, fast analytics are historically a very intensive use case especially if you want to deploy on your own hardware. Solutions like Atoti allow banks to take full advantage of the native cloud capabilities of Azure and improve drastically performance whilst keeping a control over their costs. "

— Xavier Perret, Azure Director
for Microsoft France

Key takeaways



Enhanced Analytics Capabilities: Running ActiveViam in the cloud dramatically improves your analytics capabilities while significantly reducing hardware costs.



Seamless Integration: Designed to integrate with any existing architecture, ActiveViam can be operational within your bank in under a month.



Optimal for Key Risk Areas: Ideal for market risk, credit risk, intraday liquidity, and other use cases requiring precise, time-sensitive analysis on large data volumes.



DirectQuery Innovation: With DirectQuery, ActiveViam provides flexible and efficient access to both in-memory and in-database queries, optimizing your hardware footprint and maximizing the ROI of your cloud investment.



Dynamic Resource Management: ActiveViam's cloud-first approach allows dynamic adjustment of hardware resources in real-time, ensuring cost efficiency and scalability.



Comprehensive Data Handling: Easily manage detailed and historical data without compromising performance, enabling deeper insights and better decision-making.



About ActiveViam

Founded by industry experts, ActiveViam understands the data analytics challenges faced by financial institutions across trading desks, risk, and compliance. ActiveViam pioneered the use of high-performance analytics in finance, helping the largest investment banks, asset managers and hedge funds make better decisions, explain results with confidence, and simulate the impact of their decisions. ActiveViam's mission is to deliver train-of-thought analysis on terabytes of data in the most cost-effective way so clients can explain their results with confidence and model the scenarios that will optimize their business. ActiveViam specializes in risk data analytics for one of the fastest moving and most regulated industries with a presence in the world's leading financial marketplaces – London, New York, Singapore, Sydney, Hong Kong, Paris and Frankfurt.

For more information please visit:
www.activeviam.com



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