

# Streaming data warehouse revolutionizes data analysis.

*“Collaborating with Dell Technologies OEM Solutions and NVIDIA allows us to scale out and maintain excellent performance for clients, because the architecture we jointly designed works not only across CPUs, GPUs and tiered storage, but also across multiple, clustered servers.”*

**Samm DiStasio**  
VP of Business Development, Kinetica

## Situation Analysis

Helping enterprises translate data into customer value and competitive advantage.

Kinetica analyzes massive data volumes to help government agencies and some of the world's leading corporations be more efficient in strategic decision-making and planning. Legacy analytics technologies can't keep up with the complexity of data and the speed at which it is generated, creating an opportunity for a new solution. The Kinetica Streaming Data Warehouse combines historical and streaming data analysis with powerful AI and location intelligence.

At the inception of the company, Kinetica made a critical design decision to overcome the computing limitations of CPUs by also using GPUs, which can scale to thousands of cores and enable powerful parallel processing. Kinetica chose NVIDIA® as its GPU partner to greatly accelerate data processing, analytics and rendering.

### **Creating a repeatable solution to enable fast, data-driven, strategic decisions.**

Kinetica's first client was the U.S. Postal Service, the largest logistical entity in the world. Kinetica performed real-time route optimization for the entire USPS fleet. Following that success, Kinetica quickly expanded into other industries, including finance, telecommunications, logistics and the public sector, helping organizations gain rapid insights from massive amounts of data. At the same time, Kinetica was still looking for the best possible hardware to run its streaming data warehouse.

## Design Partnership

### Three-partner collaboration revolutionizes how enterprises do business.

After working with several server providers, Kinetica decided to engage Dell Technologies OEM Solutions and engineer its solution on Dell EMC PowerEdge servers with NVIDIA® GPUs. Together with OEM Solutions and NVIDIA engineering and product teams, Kinetica developed a customer-ready offering. Samm DiStasio, VP of business development at Kinetica, explains, “We worked with Dell Technologies OEM Engineered Solutions and NVIDIA® to create a portfolio of t-shirt-sized configurations that would best support our clients’ challenging use cases with an appliance-like solution that can scale out and deliver the fast performance that supports decision-making based on huge data masses.”

### Outcome

### Kinetica benefits millions of consumers around the globe by enabling the companies that serve them to accelerate their decision-making and planning.

The collaboration between Kinetica, Dell Technologies and NVIDIA® directly impacts the IT teams in many global enterprises. DiStasio says, “IT departments experience improved efficiencies because they can work with consolidated software running on a much smaller set of servers.” As the Kinetica streaming data warehouse helps these companies think, decide and act faster based on data evidence, it indirectly benefits millions of people who receive more valuable, responsive services and better products from the companies they do business with.

Kinetica’s solution runs on Dell EMC PowerEdge R740 servers equipped with NVIDIA® GPUs. As a 2U socket server, the PowerEdge R740 has a small footprint, making it easier to add nodes in clients’ data centers.

#### Meeting client needs from solution development to exclusive financing.

The collaboration between Kinetica, OEM Solutions and NVIDIA® spans from hardware design to helping clients bring the solutions into their operation:

- Kinetica works with dedicated experts from OEM Solutions and NVIDIA® to refine the unique tiered-memory architecture of the streaming data warehouse for more use cases and even larger data volumes.
- As NVIDIA® advances GPUs to become more powerful and versatile, consultative support from NVIDIA helps Kinetica adjust its solutions to take advantage of these innovations.

- Dell Technologies and Kinetica are testing Dell EMC PowerScale storage for deployment with the streaming data warehouse to augment or replace clients’ legacy systems with highly dependable, powerful storage of practically unlimited capacity.
- Dell Financial Services (DFS) assists Kinetica clients in acquiring the streaming data warehouse by offering financing and purchasing options. DFS involvement makes it possible for Kinetica to support a range of diverse, fast-growing clients that might otherwise not be able to take advantage of the solution.
- Customers can purchase the Kinetica solution directly from Dell Technologies.

Kinetica clients frequently experience remarkable performance and efficiency improvements. The company’s internal benchmarking reveals speeds that are between 10 and 22 times faster than what Kinetica’s competitors can provide. Because there is also a substantial cost savings in replacing hundreds of CPUs with a small number of GPUs, smaller organizations can take advantage of Kinetica to bring their innovations to customers.

#### Achieving great outcomes efficiently and with outstanding performance.

Kinetica’s clients use the streaming data warehouse to accelerate data analytics, make better strategic decisions, and simplify data center management. For example:

- A leading U.S. retailer consolidated over 100 Spark and Cassandra nodes into just 8 Kinetica nodes, thereby greatly reducing IT administrative workloads and making it easier to enhance the quality of the customer experience with rapid, dependable services.

- A telco client is able to make the highest ROI network improvement and site buildout decisions, because the Kinetica solution takes only 15 minutes to render an extremely detailed map overlaid with customer phone signals — a task that would take six years with a legacy geospatial database and conventional hardware. The map also allows the telco to offer location-based services to businesses.

Kinetica is currently pursuing opportunities in the areas of smart cities and edge computing with OEM Solutions and NVIDIA®. “We are looking at combining the Dell Technologies offerings for the Microsoft Azure Stack with our solution to enable edge computing,” DiStasio explains. “This will be particularly helpful for telco companies that want to bring workloads closer to their customers to improve the speed and reliability of their services.”

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