The Fourth Industrial Revolution is predicated on data. Success depends on recognizing data as the most valuable corporate asset. From smart cities to autonomous vehicles, logistics to retail, finance to healthcare, organizations that build smart, analytical applications to make data-driven decisions instantly shape markets, threaten incumbents, and drive new business models centered around data. The Kinetica Active Analytics platform dramatically simplifies the architecture to deliver essential smart analytical applications at massive scale.

Traditional approaches to analytics (passive analytics) were designed before the rise of the Internet of Things (IoT), artificial intelligence, and location intelligence. Businesses are left with assorted analytics technologies that struggle to align and apply advanced analytical techniques effectively. The cloud-ready platform unites the key elements of active analytics: historical analytics, streaming analytics, graph analytics, location intelligence, and machine learning-powered analytics. Enterprises use the platform to build smart analytical applications that assess and act on data instantaneously.
The Challenge

Businesses implementing active analytics encounter several challenges:

- Impossible to analyze streaming and historical data simultaneously, at scale
- Difficult to incorporate location intelligence into applications
- Hard to integrate machine learning into production applications
- Complicated to stitch together a mix of different technologies that weren’t designed for active analytics

The solution is an active analytics platform. The Kinetica Active Analytics Platform lets you combine and analyze billions of live and historical data points continuously and automatically, to shape your decisions instantly.

Customer Success

ANADARKO PETROLEUM CORPORATION

“An active analytics platform is no longer an option but a necessity. NVIDIA and Kinetica have enabled us to do the impossible — render a high-fidelity, 3D-view of an oil basin using 100 billion data points at scale. The Kinetica Active Analytics Platform and NVIDIA GPUs are critical to the next phase of our project, accelerating the output of our data scientists and geoscientists to run GPU-accelerated models that make spatial and economic predictions faster for the most capital-efficient recovery of resources out of the basin.”

SANJAY PARANJII, CTO at Anadarko Petroleum Corporation

OVO

“We have been using the Kinetica platform extensively for the last two years. The versatility and speed of the Kinetica Active Analytics platform has proven critical to our project, namely acting as a high-throughput API Service data, performance booster for our big data Hadoop cluster, and as a real-time and highly complex rules engine that identifies real-time marketing campaigns for millions of our customers. The new Kinetica 7.0 version capabilities will make it possible for us to add GPU-accelerated graph analytics, increasing our agility to expand into new customer use cases.”

BENNY RIADI, Head Solution & Big Data Architect at OVO

TELKOMSEL

“The Kinetica Active Analytics platform is purpose-built for historical and streaming data and provides real-time data analysis and location intelligence across our business. In partnership with Kinetica, we continue to build smart analytical applications that provide a real-time view of the business and superior service for our customers.”

MONTGOMERY HONG, CIO at Telkomsel
The Kinetica Active Analytics Platform

Kinetica is built on the core elements of active analytics:

**GPU-Accelerated Database**

At its core is a distributed, in-memory GPU-Accelerated database that utilizes the full processing power of CPUs and GPUs to analyze massive, complex data sets with millisecond response times.

- **In-Memory OLAP Database**
  At the core of Kinetica is a vectorized, columnar, memory-first database designed for analytical (OLAP) workloads. Kinetica automatically distributes any workload across CPUs and GPUs for optimal results.

- **GPU-Accelerated**
  Purpose-built to leverage the parallel computing power of the GPU. Kinetica automatically distributes any workload across CPUs and GPUs for optimal results. Use industry-standard SQL to process and analyze billions of rows of data sets in a matter of microseconds.

- **Wide Range of Analytical Techniques**
  Kinetica supports a full range of analytical techniques including text search, time series analysis, location intelligence, and graph analytics, as part of a fully-integrated toolset.

- **Enterprise-Scale Tiered Storage**  **NEW!**
  Designed for Enterprise-Scale, Kinetica can operate on the entire data corpus by intelligently managing data across GPU memory, system memory, disk / SSD, HDFS, and cloud storage like S3 for optimal performance.
Location Intelligence

Leveraging the power of GPUs, Kinetica is especially well-suited to location intelligence, bringing your geospatial and business data together under one roof. The platform is designed from the ground up to deliver interactive geospatial analysis at unprecedented scale, blending your streaming and historical location-enabled business data on-demand.

- **Complex Geospatial Operations**
  Use our robust and GPU-accelerated library of geospatial functions to perform on-demand filtering, aggregation, time-series, geo-join, and geofence analysis on massive streaming and historical geospatial data sets.

- **Geospatial Visualization**
  Display unlimited geometry, heatmaps, and contours, leveraging server-side rendering technology, that enables developers and business analysts to build highly interactive geospatial applications and dashboards.

- **Geospatial Graph Analytics**  **NEW!**
  Seamlessly use your relational data in a native graph context for understanding geospatial and non-geospatial relationships. Perform real-time route optimization and even social network analysis using our GPU-accelerated graph algorithms.

- **Geospatial APIs**
  Enable your developers with native and REST APIs that make it easy to integrate your application with Kinetica. Then connect your application to leading mapping providers with a standards-compliant WMS service.

Machine Learning-Powered Analytics

With a “Bring Your Own Algorithm” approach, organizations can embed machine learning and advanced algorithms into their active analytical applications without the headache of complex data engineering, migrating data between disparate systems.

- **Bring Your Own Algorithm**  **NEW!**
  Bring your models to the data, not your data to the models. Bring existing models and analytics as containers and embed them into your analytical workflows and applications without the heavy lifting of migrating data to and from siloed model execution environments.

- **Automated Deployment & Data Orchestration**  **NEW!**
  Kinetica automates model deployment on Kubernetes – in continuous, on-demand or batch modes. No need to worry about deployment, network configuration, or scaling. Once deployed, Kinetica automatically orchestrates the full analytical pipeline – from ingest to database to model and back to database and downstream applications.

- **Pushbutton Distributed Training**  **NEW!**
  Explore data interactively, at scale, across dimensions, to find patterns. Then, experiment rapidly with built-in support for the most popular TensorFlow templates and fully automated distributed training.

- **Model Audit**  **NEW!**
  Track, govern, and audit data that’s part of your analytics and ML workloads. Kinetica tracks the full data lineage, including raw data, feature transformations, and model output. An easy-to-use search tool provides an instant ability to do a full model audit or find a “needle in a haystack” for a specific inference.
Cloud-Ready

The platform’s cloud-ready architecture delivers high availability, push button deployments, cloud elasticity, and auto scaling across public and private cloud infrastructure.

- **Highly Available** NEW!
  Configure high availability in minutes via the Kinetica management console. Instantaneously recover from unexpected changes with incremental backup and recovery.

- **API-Driven** NEW!
  Kinetica follows an API-first approach, exposing all management functions and features via REST APIs with all popular language bindings.

- **Deploy Anywhere** NEW!
  Point-and-click deployment across on-premises or public cloud infrastructure. Kubernetes interoperability for easy container-based deployment and management.

- **Elastic** NEW!
  Easily scale deployments up and down with no downtime, at the push of a button, an API call, or via auto-scaling rules.

Smart Applications

With Kinetica, developers have all of the tools they can leverage in a single platform to meet all of their project requirements.

- **Integrated Experience**
  Run complex OLAP database queries against massive data sets while simultaneously ingesting high volumes of streaming data, visualize geospatial information, and run ML training and inferencing all on a single platform.

- **APIs**
  Developers can use native APIs, REST calls, and SQL to complete their analytic tasks in Kinetica without shuffling data to other platforms.

- **Location Visualization**
  Kinetica builds geospatial visualizations on the same GPUs it uses to perform location analytics, avoiding the need for costly data transfers to third party visualization tools that can’t perform at scale.

- **Seamless ML Integration** NEW!
  Import pre-trained models to execute inferences in batch, streaming, or via a web service. Kinetica is a one-stop shop for realizing your ML investment.
PARTNER ECOSYSTEM

With a best-in-class partner innovation ecosystem to break through the old bottlenecks, Kinetica is certified on Dell, IBM, HP, SuperMicro, and Cisco servers, and has a strong partnership with NVIDIA for accelerated hardware.

Deploy On Premises or in the Public Cloud

Example Servers:
- Dell PowerEdge R730 and R740
- IBM POWER9 server, the Power System AC922
- NVIDIA DGX-1
- HPE ProLiant DL380 Gen9 Servers, Apollo 2000
- Cisco UCS C240M4

Public Cloud:
- Amazon Web Services
- Microsoft Azure
- Google Cloud Platform

For more information on the Kinetica Active Analytics Platform, visit kinetica.com or kinetica.com/trial for a 30-day test drive.