

Active Analytics Overview

The Kinetica Active Analytics platform dramatically simplifies the architecture to build smart analytical applications that assess and act on data instantaneously.

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.
- **Streaming & Historical**
Make instant, informed decisions on streaming OLAP data from IoT and edge computing. Run massively parallel, distributed queries on billions of rows of historical data for instantaneous results.
- **High-Speed Ingest**
Distributed parallel ingest capabilities. High-speed ingest on streaming datasets and complex analytics on streaming and historical data simultaneously, at scale.
- **Machine Learning Power **NEW!****
Train models directly in Kinetica or import pre-trained models to execute inferences in batch, streaming, or via public web service. Kinetica is a one-stop shop for realizing your ML investment.
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Streaming Analytics

The Kinetica Platform can analyze complex, multidimensional streaming and batch data interactively. Organizations can combine real-time data pipelines and historical data to generate better informed insights. Constantly assess and query data in real-time and action other systems based on results.

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.