

INSIGHTEDGE SMART ODS

A Digital Integration Hub

DIGITAL TRANSFORMATION HAS NEVER BEEN THIS EASY

Drive successful digital transformation by seamlessly aggregating data from multiple on-premises & cloud-based data sources into a low-latency and autonomous scaling, high-performance data fabric.

If you're using multiple systems of record and storing massive amounts of data in disparate systems, including legacy databases, and cloud-based data stores, you can now optimally leverage your operational data for your digital applications across any environment.

InsightEdge Smart ODS is a Digital Integration Hub (DIH) that can seamlessly and in real-time connect to and process data from your systems of record and existing ODS deployments to drive your digital transformation initiatives. With a unified API layer, you can decouple your digital applications from your system of records to increase agility and ensure always-on services. Together with in-memory speed that delivers unparalleled application response times at any load and high concurrency you can:

Introduce new digital applications like open banking,
instant payments, risk and fraud analysis and customer 360

Move services and data-driven decision making
from offline to online

Migrate applications to the cloud

Modernize and offload legacy systems (Mainframe, AS/400)

Run real-time operational reporting, analytics and BI
on fresh data

Batch Processing Acceleration

What is a Digital Integration Hub?

Gartner defines the Digital Integration Hub (DIH) as

"an advanced application architecture that aggregates multiple back-end systems of record data sources into a low-latency and scale-out, high-performance data store".

Application leaders struggle to deliver high-throughput, responsive and reliable APIs while minimizing the workload hitting their systems of record. By extending their API platform with a digital integration hub, they can address these issues and add value by enabling analytics and data integration.



HOW CAN YOU TELL THAT YOUR EXISTING OPERATIONAL DATA INFRASTRUCTURE NEEDS MODERNIZATION?

- ✓ Are your internal and/or external customers experiencing slow response times?
- ✓ Do your applications struggle to support high user concurrency?
- ✓ Do you need to accelerate long inefficient data ingestion and processing times?
- ✓ Will running reports, analytics and BI on fresh data provide you additional business value?
- ✓ Are you over provisioning resources to support peak volumes?
- ✓ Do you want to decouple your digital applications from your systems of record to ensure always-on services?
- ✓ Are you reliant on manual processes to ensure smooth scaling up and out?
- ✓ Do you want to be more agile and rapidly deploy new applications and services?
- ✓ Do your applications subscribe to a large amount of event triggers?
- ✓ Do you need to effectively replicate data across sites and regions in real time?
- ✓ Is your data infrastructure incompatible with hybrid on-premise and cloud or multi-cloud architectures?

If you've answered **yes** to any of the questions above,
INSIGHTEDGE SMART ODS IS THE RIGHT ODS FOR YOU.

SMART ODS: A MODERN APPROACH TO DATA MANAGEMENT

Enterprises can now either augment their existing Operational Data Store (ODS) architecture or deploy an out-of-the-box Digital Integration Hub to:

Simplify the current, traditional ODS architecture with a modern, scalable, cloud-native, low-latency data fabric.

Gain value-added functionality including:

- Accelerated applications and decision making, with a low latency, and distributed smart caching layer
- Ensured 24X7 services by decoupling digital applications from the systems of record with a unified API layer.
- Autonomous scaling capabilities to scale both up and out for transactional and analytical workloads
- Application development agility with a microservices architecture
- Business-policy driven data tiering to ensure that the most important data is in the fastest tier, meeting your SLAs
- Efficient event triggers and notifications with minimal disruption to existing infrastructure

Choose to leverage a non-intrusive Change Data Capture (CDC) that connects directly with your systems of record.

Transition to the cloud, while supporting hybrid environments.

HOW DOES INSIGHTEDGE SMART ODS WORK?

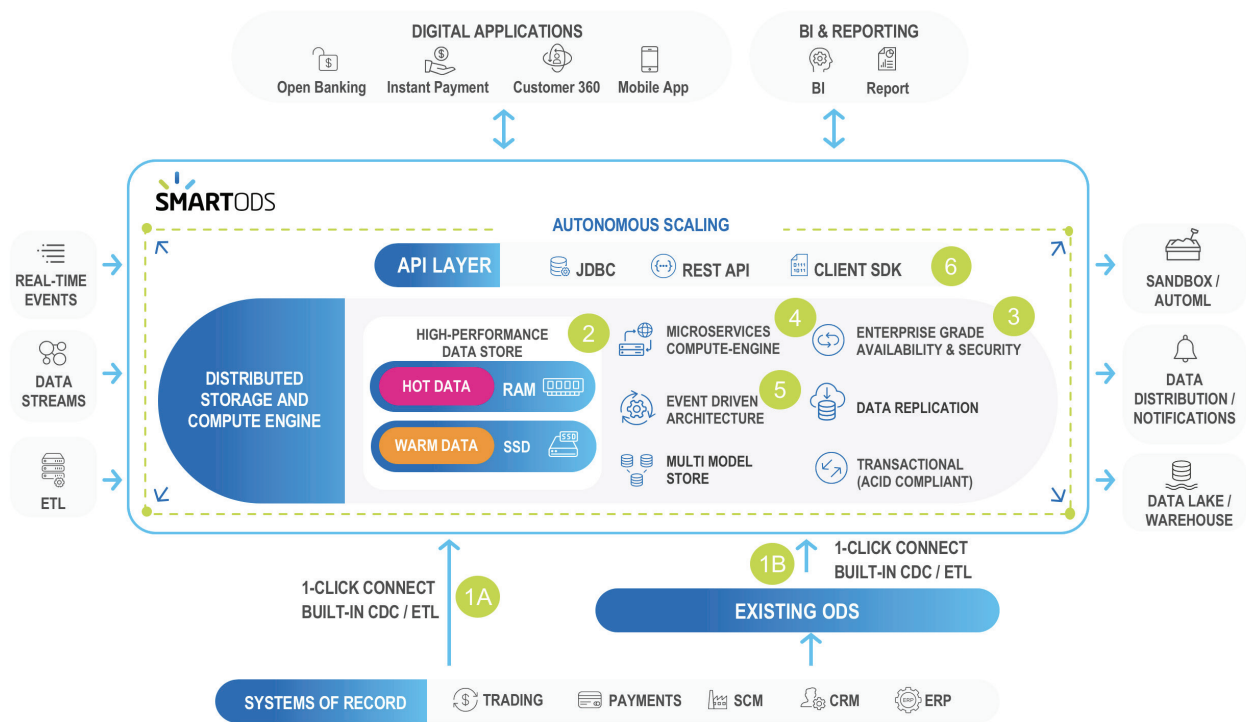


Figure 1: InsightEdge Smart ODS Architecture

- 1A One-click connect to multiple systems of record with real-time and batch integrations
- 1B You can choose to connect to your existing ODS, using CDC or standard connectors/ETL
- 2 Automated data & index tiering - hot, warm, and cold storage.
- 3 Enterprise ready designed for 99.999% availability & DR, and enterprise security
- 4 High performance compute engine with millisecond response time for your digital applications
- 5 Event driven architecture - allow applications to subscribe to different event templates
- 6 Unified API layer for all digital applications and operational analytics

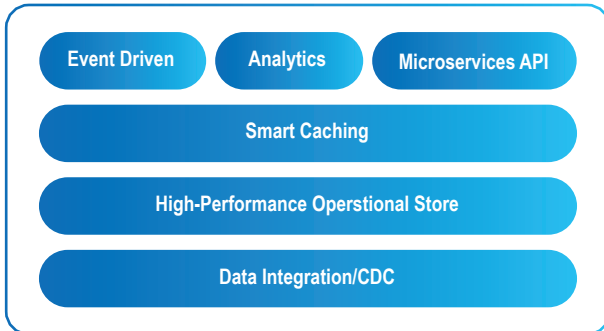
The Cloud Native Advantage

With out-of-the-box, fully agnostic, cloud management functionality you can deploy across hybrid, cloud and multicloud environments with just one-click. The platform supports rolling upgrades, monitoring, scaling and recovery - all with no downtime. Smart ODS uniquely delivers:

- Autonomous scale up and out for transactional and analytical workloads
- Application aware SLAs - performance, scaling, availability and persistency
- Instant scaling for unpredictable workload bursts

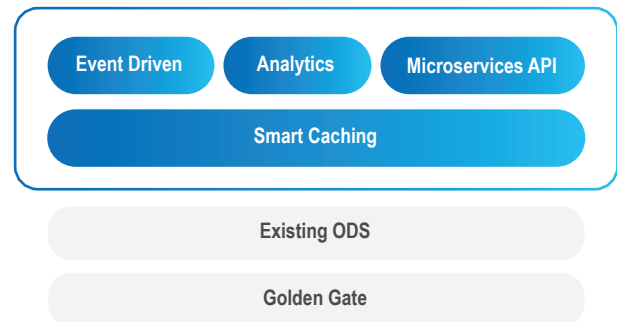
INSIGHTEDGE SMART ODS IS AVAILABLE AS:

Out-of-the Box Operational Data Store



Easily deploy an out-of-the-box Smart ODS, with all of the necessary components to rapidly ingest and process data in real-time from your systems of record to serve your digital applications. This configuration is geared for small to medium enterprises and for new projects that do not yet have an existing ODS.

Augmented Operational Data Store



Solve the limitations of your existing traditional ODS deployment which does not provide the performance, scale, concurrency and agility that you require for your digital applications and operational BI needs. You can enhance your existing ODS with minimal investment, and without the need to rip and replace.

SMART ODS – DIGITAL INTEGRATION HUB COMPONENTS

The following native and modular components can be leveraged according to the needs of your organization. They are part of a unified installation with a single orchestration tool.

- **High-Performance Data Store** – Highly available, low latency in-memory processing and storage to run your applications, reports and analytics in real-time on operational data. With no-code integrations, you can connect to your data stores in one-click, or leverage built-in CDC and enjoy high ingestion of any data structure, supporting millions of IOPS. Ultra fast data processing includes real-time transformations and dynamic server-side aggregations as part of data preparation and enrichment. Your data is managed according to the business policy that you define and dynamically managed across RAM, SSD and your data bases.
- **Smart Caching** – Robust In-Memory data grid technology powers a low-latency, distributed and scalable caching tier on any operational data source, optimized for your applications' advanced queries, with native secondary indexing and dynamic fast aggregations. AI-driven autonomous scale out/up handles your unexpected workloads.
- **Event-Driven Architecture** – Define and manage multiple data events (aka triggers) and enable multiple digital applications to subscribe to real-time events for critical decision-making.
- **Unified API Layer and Co-located Microservices** – Use of standard RESTful API and JDBC/SQL queries for all digital applications using a unified API gateway/proxy. This combined with colocated microservices delivers extreme performance and unparalleled agility.
- **Change Data Capture (CDC)** – Existing ODS solutions use either third party CDC solutions or batch ETLs. With GigaSpaces Smart ODS it is possible to easily connect to your legacy infrastructure or existing ODS in a non-intrusive way, to get immediate data updates. This is delivered as part of Smart ODS with unified installation and orchestration.

CASE STUDY - SOCIETE GENERALE

The Company

A multinational investment bank and financial services company, with over €24B in annual revenue.

The Challenge

Société Générale had 200 applications including pre-trade, risk management, accounting services and more, and needed to grow this number significantly. Each system of record had a different API, making it difficult to get a single view of the data across applications and platforms. Societe Generale lacked a single source of data truth. In addition, the existing infrastructure supported only 99% availability, which was not enough to meet the bank's service level agreements.

The Solution

Société Générale implemented GigaSpaces Smart ODS as a data store and data processing layer which provides a single API to 7 systems of record. The smart caching module was used to significantly accelerate data access. In addition, the Smart ODS data replication service provided asynchronous replication in real-time between sites in Paris, NYC, and London.

Results

Number of applications connected to Smart ODS grew **from 200 to over 400 applications** in less than three years

Up to **20 million** daily real-time event triggers sent to applications

99.999% availability

Hundreds of concurrent internal users

Worldwide real-time data replication

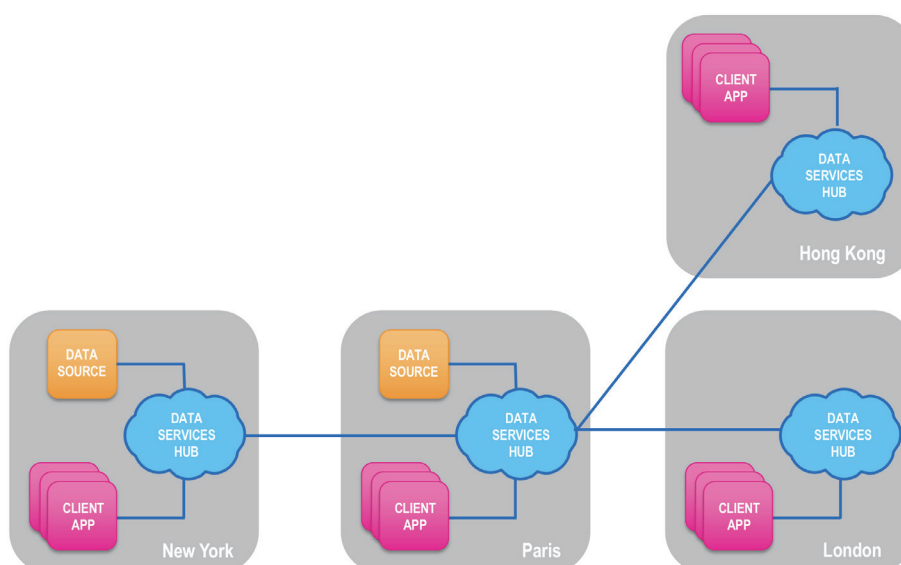


Figure 2: Multi-Region Data Replication at Société Générale

WHAT MAKES THE GIGASPACE SMART ODS THE RIGHT FIT FOR YOUR ORGANIZATION:



Distributed In-Memory Computing technology with co-location of data, application logic, and ML models in the same memory space for extreme performance.



AI-Driven Operations and Management -

1. Autonomous scaling based on actual system workload
2. Dynamic hot, warm and cold data tiering driven by business logic
3. Automatic indexing system with recommendations driven by actual usage / queries by digital applications.



No Code, 1-Click Data Integration for fast connection to legacy infrastructure and other data sources and **built-in CDC** for real-time ingestion and non-intrusive (agentless) synchronization.



Enterprise Grade - the solution was designed to be always on, in-memory, highly available with disk/database persistence, DR site as well as upgrades and scaling without downtime.

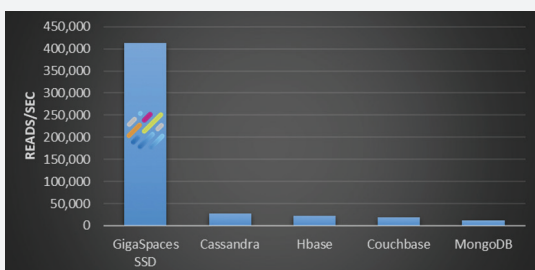


True Cloud Native - out-of-the-box, fully agnostic, cloud management functionality, such as hot rolling deployment, upgrade, monitoring, scaling and recovery; all with no downtime across on-premise, cloud and hybrid.



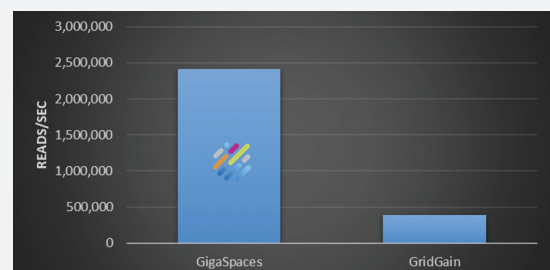
Multi-Region Data Replication - sync replication without impacting site performance

30x Faster than NoSQL



*YCSB Benchmark: 100% Read Workload

6X Faster than Other In-Memory Platforms



*Yardstick Benchmark: 100% Read Workload

MAKE YOUR DATA A STRATEGIC & VALUABLE ASSET.

THE SMART ODS VALUE:



Enhance Customer Experience

Guarantee low latency response times AND high concurrency to meet SLAs.



Optimize TCO

Deploy your infrastructure based on “normal” usage rather than overprovision for peaks.



Drive Time-Sensitive, Critical Decision Making

Use operational analytics and execute reports, trigger business rules, and make predictions with ML models using fresh data.



Ensure Always-On Services

Highly available with unified installation, provisioning, self-healing/resilience, auto-scaling with no-downtime, and upgrades.



Rapidly Deliver New Services

Introduce new applications & services faster, either as a client of the ODS or deployed as a microservice.



Become Cloud Native

Deploy existing ODS solutions in a multi-region/hybrid environment robustly and efficiently while adhering to privacy regulations.

A NEW WAY FORWARD

Managing and analyzing data has always been the greatest benefit and greatest challenge for any organization. Thus, successful data-driven digital transformations require a novel approach to integrating complex data ecosystems. With the GigaSpaces Smart ODS, organizations can achieve the full potential of their data by augmenting their traditional architectures to meet modern business needs.

ABOUT GIGASPACEs

GigaSpaces is redefining in-memory technology to drive enterprise digital transformation with unparalleled speed, performance and scale. Never before has it been this simple to accelerate and scale real-time applications, analytics and operational BI on any data, at any load, across any environment.

The GigaSpaces InsightEdge Portfolio delivers the fastest, scalable and easiest to deploy, suite of software platforms to meet the most challenging enterprise data and analytics processing needs. The Smart Cache, Smart Operational Data Store (ODS) and Smart Augmented Transactions platforms are powered by a unique combination of smart and autonomous data operations and management capabilities. One-click integrations with on-premise and cloud operational data stores, automatic data modeling, business-policy data tiering and dynamic scaling reduce time-to-market and ensure rapid response times and highest performance levels, with lower TCO.

Hundreds of Tier-1 and Fortune-listed organizations and OEMs across financial services, retail, transportation, telecom, healthcare, and more trust GigaSpaces for powering their mission critical services to optimize business operations, adhere to regulatory compliance and enhance customer experience.

GigaSpaces offices are located in the US, Europe and Israel with partners around the globe; serving customers such as Morgan Stanley, Bank of America, CSX, Goldman Sachs, Société Générale, Crédit Agricole, Avanza Bank, SITa, Avaya, Frequentis, CLSA, Groupe PSA and UBS.

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