GIGASPACES

SMARTDIH

The Operational Data Hub to accelerate your digital innovation

To win in today's digital reality, companies need to be able to launch online applications quickly – and provide a delightful and superior user experience. This has led to an explosion in digital services, stretching the ability of IT systems to deliver the 'always fresh – always on' data that modern applications rely on.

When the number of concurrent users grows, and the demands of digital applications become more complex, the ability of legacy systems to respond to service requests may degrade. The result is **poor customer experience, stunted business growth** and **higher costs** tied to inefficiencies and complexity.

> To address these challenges, data confined in legacy and disparate systems of record needs to be liberated and delivered directly to digital applications.
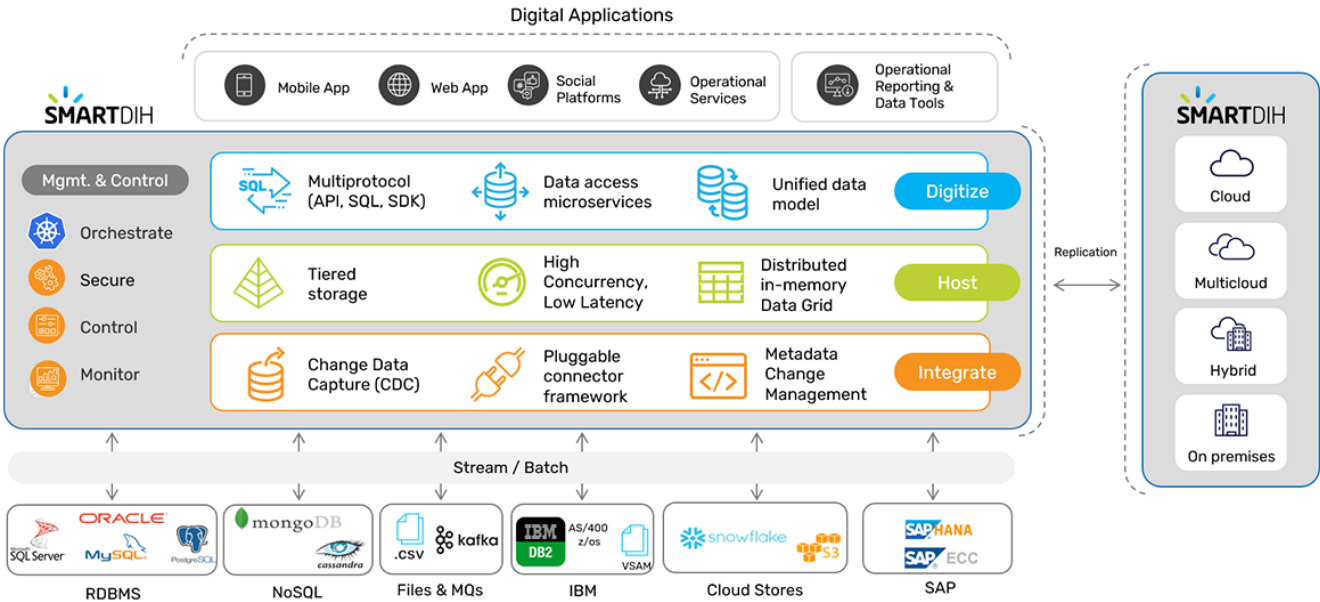
SMART DIH: Accelerating Digital Innovation

Smart DIH is an operational data hub that accelerates digital innovation by aggregating multiple back-end systems into a **low-latency, scalable,** high performance data layer exposing APIs and events. By decoupling systems of record from digital applications Smart DIH enables enterprises to **drastically shorten the development and deployment cycle for new digital services,** and rapidly scale to serve millions of concurrent users – no matter which IT infrastructure or cloud topologies they rely on - cloud, on-prem or hybrid.

SMART DIH: Nuts & Bolts

Smart DIH offers in-memory performance, elasticity and scale, business policy-driven tiered storage, low code microservices creation, and always-on services.

Smart DIH consists of three functional layers: Digitization layer, hosting layer and a data integration layer.

Digitization Layer

The digitization layer connects to multiple and diverse digital channels. Data is served to digital applications over a unified data model that supports a mix of structured and semi-structure data through RESTful APIs and events, using SpaceDeck's low-code service creator. In addition, distributed SQL queries may be executed from third-party applications, using clientless JDBC/ODBC connectors.

Hosting Layer

Leveraging an in-memory data grid to support performance and concurrency requirements, Smart DIH's hosting layer provides a high performance, highly available and resilient data store designed specifically for the needs of real-time digital services. The data layer hosts data from multiple sources, consolidated as a unified and easy to understand data model that supports a mix of structured and semi-structured data.

Data Integration Layer

Smart DIH connects to - and consolidates data from - disparate SoRs using an event-based approach featuring streaming and incremental load data pipelines. The highly flexible pluggable data connector framework combined with embedded change data capture tools, such as IBM Infosphere Data Replication (IIDR), replicate data in real-time from numerous and diverse SoRs in response to any event. Smart reconciliation mechanisms support recovery and schema change scenarios.

Cloud-native for Flexible Deployment

Smart DIH is a cloud-native data hub and can be deployed flexibly, according to organizational preference: available as a PaaS or deployed in private or public clouds, on-premises – or in hybrid configurations.

Smart DIH Optimizes Synergies with Existing Tools to Move Your Business Forward

Smart DIH complements your IT environment, allowing you to leverage the application integration and data management solutions that may already be deployed in your organization to address a range of use cases.

Integration Data Hub

iPaaS solutions are widely deployed for orchestrating data across application and data repositories. However, the rapid growth and diversity in underlying data sources may lead to system limitations since the platform can only perform as well as its poorest performing component. Smart DIH solves this constraint elegantly by decoupling and isolating the iPaaS from the underlying data sources, continuously serving the iPaaS-based applications with accurate fresh data from systems of record (SoRs).

Digital Innovation over Legacy Systems

With Smart DIH, enterprises can develop & deploy a surge of new digital services at a rapid pace – on top of their existing data architecture, without having to replace any of their data sources. The Smart DIH pluggable connector framework ensures seamless integration with numerous legacy systems such as IBM (Mainframe AS/400, DB2, and z/OS), SAP, and Oracle, creating an event-driven replica that ensures 24/7 data availability, regardless of any SoR downtime.

API Scaling

When business applications deal with large amounts of data, combined with intensive computation, latency may increase leading to degraded performance and missed SLAs. Smart DIH solves this issue by decoupling applications from diverse and disparate SoRs, and replicating operational data into a low-latency high-performance layer that serves data to iPaaS- based workloads while reducing the load on the underlying systems. As a result Smart DIH unleashes the full potential of always-on APIs orchestrated over the iPaaS.

Cloud Journey Enablement

Organizations are increasingly shifting workloads to cloud environments. However, many systems of record (SoR) reside as native on-prem residents, and are difficult to replace. Moreover, adding new applications on top of legacy SoRs creates dependencies that slow down strategic modernization initiatives. Smart DIH can ease the transition to the cloud by serving as a middleware that abstracts modern applications from the underlying SoRs. This empowers IT and application teams to launch new applications easily over the Smart DIH, regardless of where the underlying SoR resides.

Business 360

The ability of diverse business units to have a holistic 360 view of customer activity ensures enhanced customer service and enables up-sell and cross sell opportunities. However, when data is locked down in disparate SoRs across business units, it cannot be easily utilized or accessed. Smart DIH addresses this challenge by creating a unified data model which provides a holistic view of customer data, pivoted around the business entity. This allows organizations to engage with customers consistently, address upsell / cross-sell opportunities, and ensure customers a consistent digital experience across all service channels.

Multi/Hybrid Cloud Integration

Many organizations operate in hybrid/on-prem environments while also maintaining workloads in multiple clouds. However, the ability to consolidate data from multiple locations in multiple clouds and on-premises for real-time delivery to digital applications can be complex given the insular nature of each environment. Smart DIH solves this problem by harmonizing data from systems residing in multiple clouds and hybrid environments into a low-latency, scalable, high performance data layer, exposing APIs and events in near real-time to digital applications.
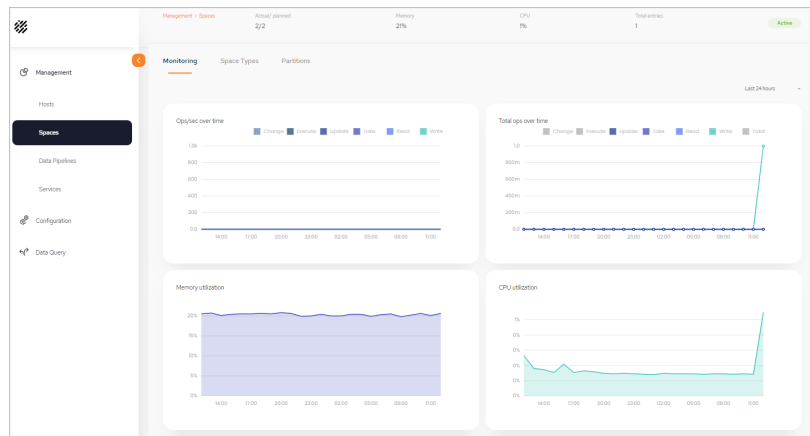
Powerful Management and Monitoring Console

Smart DIH is managed through the Smart DIH **SpaceDeck** - a powerful management and monitoring console. SpaceDeck offers a Web UI and CLI interface for easily building and deploying new microservices in hours instead of days.

With SpaceDeck data professionals can create and manage data pipelines from any SoR to deliver fresh data in real-time to operational and transactional workloads. SpaceDeck offers robust platform capabilities including monitoring and troubleshooting, as well as seamless integration with operation centers for end-to-end monitoring and control.

Smart DIH's low-code tools empower data professionals to launch new services, without having to rely on programming expertise. It completely automates new microservices development and deployment, providing DevOps team with simple out-of-the box tools that eliminate the need for tailored tooling creation.

> **By eliminating complexity and streamlining new service delivery, Smart DIH enables organizations to drive new business initiatives and shorten time to market.**

About GigaSpaces

GigaSpaces is building on its in-memory computing and operational data store technologies to offer one of the market's first Operational Data Hubs, an out-of-the-box data platform that empowers organizations' digital transformation, while lowering legacy systems' TCO. Whether you need to accelerate one application with cache, or modernize your entire architecture, GigaSpaces can future-proof your investment. Never before has it been this straightforward to accelerate API-powered digital applications.

Smart DIH is part of the GigaSpaces Smart suite of products, alongside the award-winning Smart Cache solution. GigaSpaces offices are located in the US, Europe and Israel, with partners such as Capgemini and Cognizant around the globe; serving customers such as Morgan Stanley, Bank of America, BBW, CSX, Goldman Sachs, Societe Generale, Credit Agricole, American Airlines, Avanza Bank, Avaya, CLSA, and UBS.

For more information visit www.gigaspaces.com.