

# Master Data Management with In-Memory Increases Speed and Capacity of Data Operations

Increasing volume of data is stretching the performance of businesses that depend on it to deliver superior digital experiences. For these companies, success depends on their ability to acquire, manage and share high-quality data fast.

Master data management (MDM) empowers retailers, distributors, manufacturers, and financial institutions to harness their data and put it to work for better customer experiences and operational efficiency. MDM supports digital transformation and addresses the challenges that arise with the ever-increasing amounts of data. MDM makes data consistent, easily accessible and insightful.

However, to fully deliver on its potential even the best MDM implementation must have the capabilities to match the increasing volume of data through optimized performance:

- As companies expand the scope of MDM into multidomain MDM, data set volume and complexity expand, too.

Therefore, the MDM platform must support searching through and processing vast amounts of data from multiple sources.

- Objects with multiple characteristics and relationships across data domains rapidly increase the complexity of queries.

Therefore, high volume operations on complex data structures, such as bulk imports, exports, and business rules evaluation need faster data access.

- Traditional data storage technology has evolved at a slower pace.

Therefore, improving search time can eliminate bottlenecks to amplify the real-time potential of MDM.

## Optimize performance with in-memory

Stibo Systems Multidomain MDM includes an **in-memory database (IMDBMS)** component to provide exceptional performance by accessing data directly from low-cost memory vs. traditional disk storage. This provides significantly faster data query speeds and improvements in resolution of heavy processes such as exporting large complex data sets or handling data objects with multiple references. In order to ensure consistency, integrity and recovery, data is written to the underlying database as a part of every update transaction.

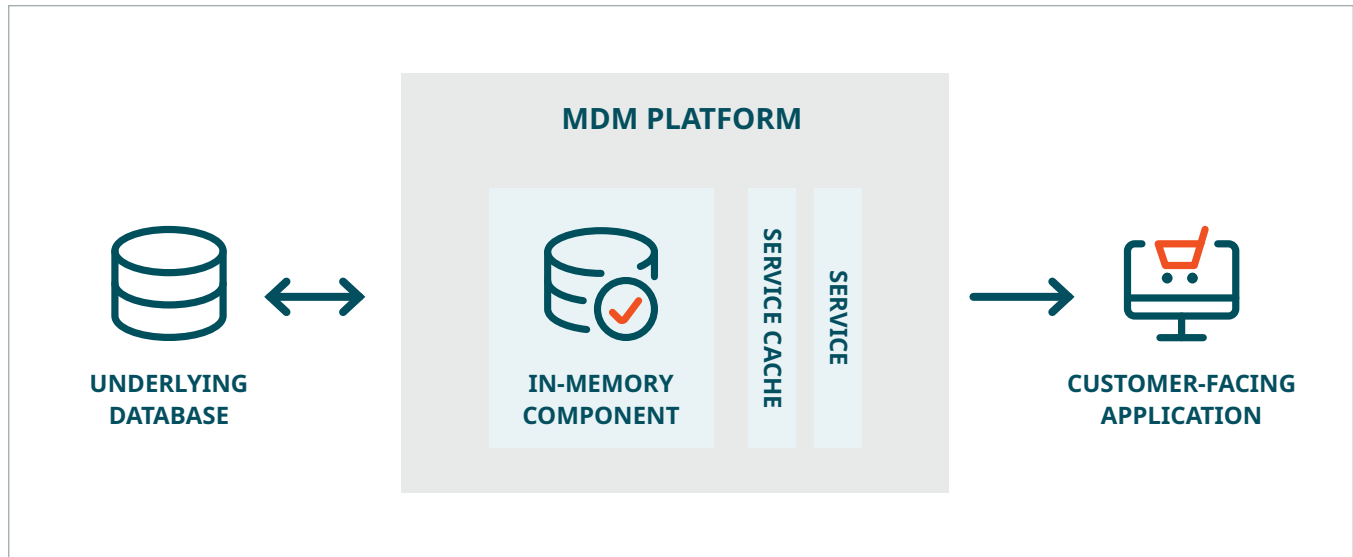
### Benefits of using MDM with in-memory:

- Faster searches on product data, customer data and more
- Increased throughput for exports and outbound integrations
- Increased throughput for imports and inbound integrations
- Accelerated operations on complex data models, including imports, exports, workflow transitions, and business rule evaluation
- Swift display of data across data domains
- Compatibility with existing queries and backup scripts

The in-memory solution takes advantage of large amounts of application server memory to hold all data available in RAM and thus maximize data fetch speed. With in-memory there is no need for the system to access the database when reading. This dramatically decreases data retrieval times when performing, e.g., complex searches or exports with calculated attributes that reference other objects.

All reading and querying from the database and disk storage is moved to the distributed in-memory database, which is optimized for efficient storage to keep memory requirements low. Data is written without delay to the underlying database, where the schema can remain unchanged.

In-memory technology is not just a caching layer outside the core that enables faster reading for consuming applications. It is deeply embedded inside the MDM server to make all ad-hoc access to data much faster when searching, matching, applying business rules, composing messages, etc.



Process: 1. MDM loads data in-memory at start-up 2. Reads and searches are performed directly in the in-memory component 3. Writes are committed back to the database (the persistence layer) to ensure security and reliability 4. Read requests are handled locally on the requesting node (the customer-facing application)

### Results using MDM with in-memory

- Up to 50-100 times faster searches
- 3 times faster quality profiling
- Up to 20 times faster exports

An extensive scalability test of Stibo Systems' MDM platform, STEP, shows that data volume has no significant impact on performance and that STEP supports a very high load on commonly used hardware.

On a four-application server setup with 50 million entities in the database, STEP is capable of supporting a number of different high-intensity scenarios:

- Up to 2,300 concurrent users with sub-second response times while running four parallel imports, four parallel exports and 16 concurrent API calls.

- More than 44 parallel exports while serving 500 users with sub-second response times, four parallel imports and 16 concurrent API calls.
- More than 24 parallel imports while serving 500 users with sub-second response times, four parallel exports and 16 concurrent API calls.
- Up to 1,300 concurrent Web Service/REST API requests with good response times while serving 500 users with sub-second response times, four parallel imports and four parallel exports.

Stibo Systems MDM with in-memory is a result of our innovation in master data management and our commitment to enable businesses to enhance their agility and drive more value from their data. Learn more about multidomain MDM at [stibosystems.com](https://stibosystems.com).

### About Stibo Systems

Stibo Systems, the master data management company, is the trusted enabler of data transparency. Our solutions are the driving force behind forward-thinking companies around the world that have unlocked the strategic value of their master data. We empower them to improve the customer experience, drive innovation and growth and create an essential foundation for digital transformation. This gives them the transparency they require and desire – a single, accurate view of their master data – so they can make informed decisions and achieve goals of scale, scope and ambition. Stibo Systems is a privately held subsidiary of the Stibo A/S group, founded in 1794, and is headquartered in Aarhus, Denmark. More at [stibosystems.com](https://stibosystems.com).