SAP Analytics Cloud | PUBLIC

Achieving Stellar Analytics Performance in Enterprise-Wide Environments
Reviewing a Large-Scale Adoption of SAP® Analytics Cloud

THE BEST RUN **SAP**

Supporting Data-Driven Decision-Making
at Scale

Performance and usability are key for users of analytics solutions. No matter the size of your organization, you need to access insights quickly to support agile decision-making. With this in mind, we want to show how the SAP® Analytics Cloud solution can deliver outstanding performance and **enable a superior user experience** – even in a large-scale deployment. We ran an in-depth study to see how the solution compares with a leading competitive offering.

Today's executives need instant access to data to inform sound and speedy decision-making. To enable this, companies must provide real-time, self-service analytics and business intelligence (BI). This requires the enablement of live queries to data sources and applications while preserving business semantics, security, and data integrity.

For many enterprises, the challenge is to maintain high levels of performance and usability when rolling out a single, unified analytics solution across geographies, lines of business, and functions. To achieve this, it is critical that the solution you choose can scale to cope with large volumes of complex data and a broad user population – to the satisfaction of every employee.

OFFERING ENTERPRISE CUSTOMERS SUPERIOR PERFORMANCE AND USABILITY
In 2010, SAP released SAP HANA®, bringing analytics and transactions together in the same database using innovative in-memory computing technology. To take advantage of this processing and query power, we then released SAP Analytics Cloud.

SAP Analytics Cloud is a single solution for analytics and planning, with live access to existing on-premise database implementations such as the SAP BW/4HANA® solution, SAP HANA, and SAP S/4HANA®. This approach is significantly different from other solutions on the market that require you to migrate data to the cloud.

Usability and high performance are priority investment areas for our engineering teams working on the development of SAP Analytics Cloud. As we deliver innovations and improvements in every quarterly release, we focus relentlessly on accelerating the response time of SAP Analytics Cloud to enable users to access insights quickly when opening and loading stories.

BENCHMARKING SAP ANALYTICS CLOUD AGAINST A LEADING COMPETITOR

To understand the benefits offered by SAP Analytics Cloud, an SAP customer wanted to compare the solution with another market-leading BI solution. With the help of SAP partner Interdobs B.V., the customer ran an in-depth benchmarking study, assessing both products for performance, semantic understanding, and support for the company's existing data platform.

About the Customer

This customer is a large multinational company in the industrial manufacturing industry.

An early adopter of SAP Analytics Cloud for use in both analytics and planning scenarios, the customer has a large SAP footprint including SAP BW/4HANA, SAP HANA, and SAP S/4HANA. Its IT landscape has evolved over many decades with significant amounts of customization to match the needs of the business.

Through acquisitions over time, the manufacturer has also added analytics solutions from different vendors to its IT landscape. This increases complexity and presents challenges in implementing a sustainable architecture that is capable of handling large amounts of data.

A key requirement is to provide users with straightforward access to insights to drive decision-making processes at various levels of the business. For this reason, the customer wanted to evaluate leading analytics products that can provide a company-wide, real-time operational view of how the business is running.

About the Benchmarking Study

Interdobs helped the SAP customer design a benchmarking study based on the following two setups:

- **Existing dashboard based on SAP Analytics Cloud** with a live connection to an SAP HANA database – The existing data model has been developed and fine-tuned over many years and is used to measure financial performance. Remodeling was not in the scope of this project.
- **New dashboard based on a third-party market-leading solution,** using a relational database management system and a cloud-based analytics solution from the same vendor as the data sources – This dashboard was made less complex by excluding supported features such as currency conversions and rates, hierarchy displays in tables, and certain complex calculated key figures. This was done due to the current limitations in how the third-party BI solution can digest these standard functionalities on SAP HANA compared to SAP Analytics Cloud. Even after simplifying the scenario, the results were clearly in favor of SAP Analytics Cloud, so Interdobs decided not to invest additional time in increasing the complexity of the setup.

"At Interdobs, we believe that SAP Analytics Cloud brings **tremendous value to businesspeople** from a functional perspective. We are very happy to see that it also delivers market-leading performance. Job well done."

Rob Huisman, Partner, Interdobs B.V.

The objectives of the study were to:
- Compare the performance of SAP Analytics Cloud to the other BI solution when opening a dashboard, focusing on:
  - Initial load: fetching data from the data source and visualizing the data in widgets such as charts and tables
  - Filtering: selecting dimension values to filter the data displayed
  - Navigation: navigating to different pages
- Assess the performance of SAP Analytics Cloud before and after the optimization of SAP HANA
- Investigate the impact on performance of using the third-party relational database management system hosted on a cloud-computing service as a replacement for SAP HANA, as well as using the additional cloud-based analytics service
- Analyze the current setup using SAP HANA and assess its level of capability and performance

Measuring the Results
Interdobs executed the study from various geographical locations and across different time zones. This was done to minimize the possible impact of network traffic on the results.

Throughout the study, the team constantly reviewed and evaluated the performance measurements. It was crucial to execute each measurement in the same manner to maintain transparency and clarity.

ANALYZING PERFORMANCE
Figure 1 shows a comparison of the performance for each of the two setups in terms of filtering, initial loading of analytics information, and navigation within the dashboards. In each of these three areas, the setup that included SAP Analytics Cloud based on SAP HANA performed significantly faster than the third-party solution.

Figure 1: Comparison of Filter, Load, and Navigation Performance Postoptimization

◼ Third-party BI solution and database ◼ SAP Analytics Cloud on SAP HANA

Comparison %

|	Third-party	SAP Analytics Cloud	Comparison %
Filter	43.9	17.5	-60
Initial Load	68.5	17.7	-74
Navigation	79.2	1.3	-98
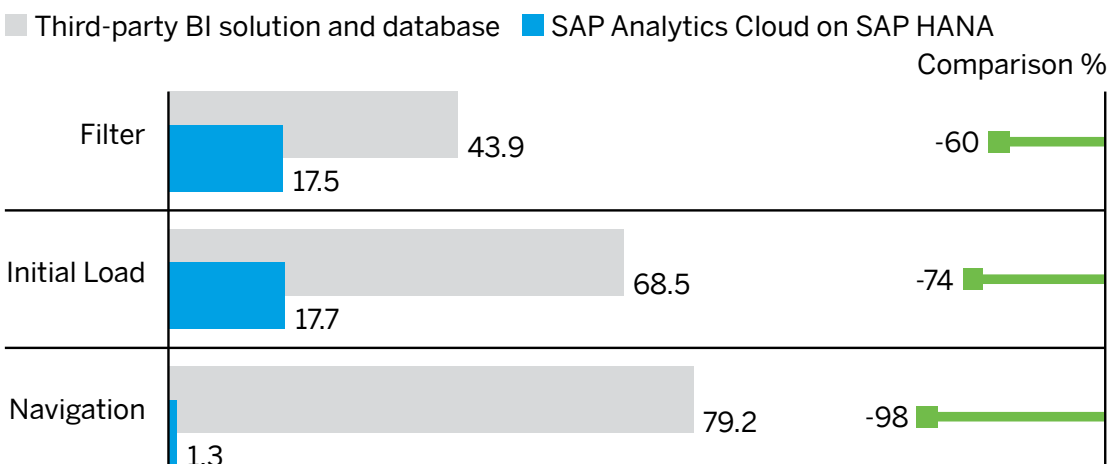
Unit of measure: average runtime in seconds

The chart in Figure 2 focuses on the impact of optimizing the configuration of SAP HANA on the response time for each of the filter, load, and navigate operations. The results show that optimization of SAP HANA according to best practices can dramatically improve performance.

Meanwhile, Figure 3 shows the response times for the filter, load, and navigate operations for the third-party BI solution after optimizing the configuration of the third-party cloud-based analytics service. The results indicate that performance improved due to the optimization. However, even taking into account this improvement, SAP Analytics Cloud on SAP HANA still runs considerably faster.

Figure 2: Performance of SAP Analytics Cloud Before and After Optimization in SAP HANA

■ Before optimization of SAP HANA   ■ After optimization of SAP HANA

Comparison %

Filter	36.7 / 17.5	-52
Initial Load	22.6 / 17.7	-22
Navigation	2.9 / 1.3	-55

Unit of measure: average runtime in seconds
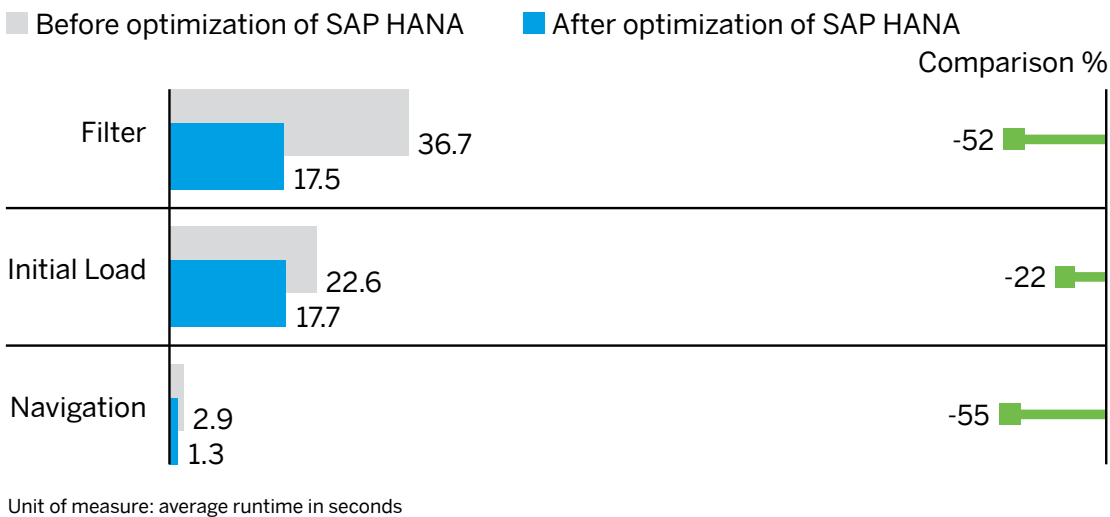
Figure 3: Performance of Third-Party Solutions Before and After Optimization

■ Before optimization   ■ After optimization

Comparison %

Filter	215.2 / 43.9	-80
Initial Load	232.5 / 68.5	-71
Navigation	87.5 / 79.2	-9

Unit of measure: average runtime in seconds
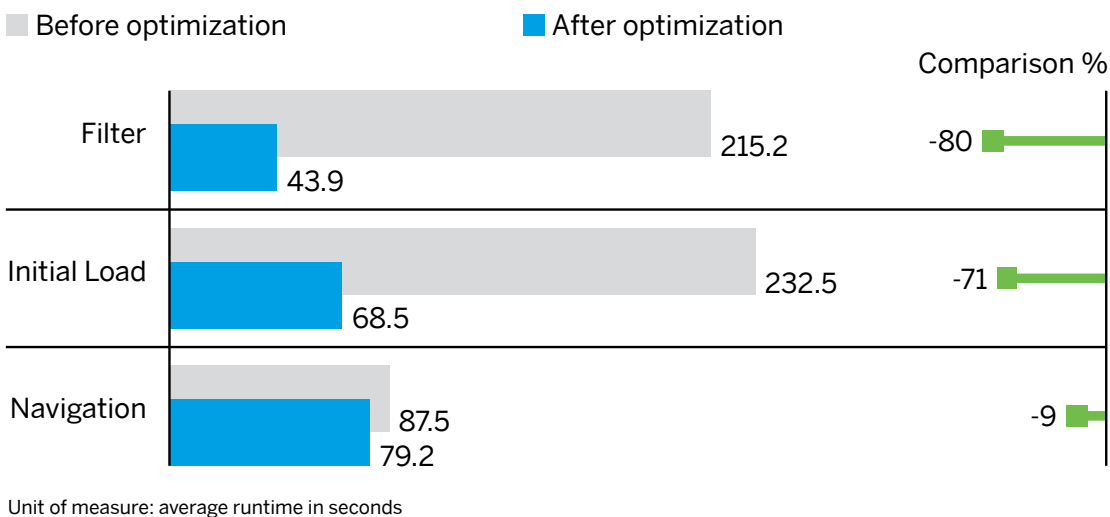
DELIVERING OUTSTANDING USER EXPERIENCES WITH SAP SOLUTIONS

For this specific use case of large enterprise analytics, SAP Analytics Cloud outperformed the third-party solution. The study also showed that optimization of the data source – whether SAP HANA or a third-party data-base – in line with best practices can significantly reduce response time, improving the user experience without additional investment. However, the greatest improvement in response time was seen when SAP Analytics Cloud was used with an optimized version of SAP HANA.

As your organization strives to become a data-driven enterprise, an analytics architecture based on SAP Business Technology Platform can be a key enabler to success. By deploying SAP Analytics Cloud on SAP HANA, you can provide a fast and reliable user experience that empowers employees to make timely and well-informed decisions.

LEARN MORE

For further information on how SAP solutions can support data-driven decision-making in your organization, visit us **online**.

PARTNERING FOR SUCCESS: SAP AND INTERDOBS

One of SAP's leading service providers for BI technology, Interdobs offers advice, project management, and support for the deployment of on-premise and cloud solutions from SAP for use in data modeling, data analysis, predictive analysis, and reporting. The SAP partner helps its customers transform business planning and decision-making processes by moderniz-ing data management, identifying KPIs, and understanding business needs and user requirements.

"This proof of concept is extremely important because it shows the power of SAP Analytics Cloud deployed for **enterprise analytics** use cases on top of live, on-premise data from SAP HANA. Many thanks to the Interdobs team for sharing it with our analytics community."

Matthias Kraemer, Senior Vice President, Head of SAP HANA Database and Analytics – Planning and Analytics, SAP SE

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