Optimal resiliency, performance and efficiency for SAP HANA

IBM Storwize family and IBM Power Systems deliver a robust storage and compute platform

Highlights

- Ensure maximum resiliency and uptime for mission-critical SAP HANA workloads

- Deliver superior performance to handle high-volume transactions and advanced analytics in support of business initiatives

- Maximize the efficiency of SAP HANA environments with built-in enterprise-grade data management and feature-rich storage services

- Optimize time-to-value with IBM storage systems certified for SAP HANA TDI

- Experience faster access to data and greater openness and innovation with IBM Power Systems together with IBM Storwize family

SAP HANA users have the opportunity to maximize the business value created by their database environments. By bringing together online transaction processing (OLTP) and online analytics processing (OLAP) in a single in-memory database, SAP HANA allows users to query large volumes of data in real time, using the insights gained to make better business decisions and gain competitive advantage. This is an idea SAP calls "real-time business", and it's an essential part of using SAP enterprise resource planning (ERP) solutions to their full potential.

However, getting the most value from your SAP HANA environment is dependent on supporting it with a strong foundation of storage and server offerings. Since SAP HANA is used for mission-critical business applications, keeping data available 24x7 is imperative. This means organizations need to prioritize resiliency and availability when selecting their deployment approach and building their storage and server infrastructure.

It's also very important to have an infrastructure with high performance, as this empowers SAP HANA to handle queries quickly and consistently, even when working with massive data sets.

An efficient storage and server infrastructure will also simplify and optimize your IT investments, and thus improve the effectiveness of your SAP HANA environments.

IBM® Storwize® family storage offerings and IBM Power Systems™ servers combine to make the ideal platform for successful SAP HANA operations. Together, they provide the unique combination of resiliency, performance and efficiency that SAP HANA workloads demand.

> *"To help improve data economics, IBM offers customers a choice in robust, highly efficient storage systems that have been certified for SAP HANA TDI, including Storwize family."*
>
> — Kyle Garman, Global VP & GM, IBM Partnership, SAP

Resiliency to keep you going

IT infrastructures built around Storwize family offerings and Power Systems servers achieve up to 99.999 percent availability[1], making them a great choice for mission-critical workloads such as those supported by SAP HANA environments.

SAP HANA users looking to prioritize resiliency would benefit greatly from IBM HyperSwap®, a high-availability feature available with Storwize family offerings. HyperSwap complements the local auto-failover solution in SAP HANA with dual-site, active-active volume access. By leveraging HyperSwap, organizations can maintain data copies at two different sites, with new data being added to both copies automatically. With each site operating separately from the other, users know that even if one site experiences an outage or failure, the other will continue operating without disruption.

In addition, Storwize systems offer both synchronous and asynchronous replication options for creating remote and local copies. This helps businesses quickly respond to and recover from planned and unplanned outages. With these storage replication capabilities, organizations put themselves in a better position to meet their target recovery point objective (RPO) of zero data loss and minimize their recovery time objective (RTO) for disaster recovery, testing and migration scenarios.

Performance to match the speed of business

With all-flash models such as IBM Storwize V7000F, the Storwize family is perfectly suited to meet the performance requirements of SAP HANA deployments. Storwize family delivers superior performance to accelerate critical business operations, especially when accessing or writing SAP source data that requires persistent storage, such as logs, data lakes, IoT streams, and data warehouse records.

IBM Spectrum™ Copy Data Management (CDM) empowers businesses to leverage storage snapshots to get the copies they need to support development, testing, cloning or restoring data in near real-time, while causing little or no impact to performance. Spectrum CDM is also another important factor in helping SAP HANA users meet their RPOs and RTOs for SAP HANA disaster recovery.

With IBM storage solutions built with IBM Spectrum Virtualize™, you can deploy advanced data management and storage services capabilities—including encryption and data reduction—across your entire storage environment. This capability applies whether you're using IBM Storage solutions, third-party storage systems, or both. By empowering you to enhance your existing storage, and consistently integrating any new storage investments you make, IBM storage virtualization will help you stay current and keep up with growth in your SAP HANA environment.

Clustered Storwize systems offer the flexibility to either scale out or scale up. SAP HANA users are able to pick the option that best meets their needs around performance and capacity. This allows them to feel confident they'll always have the capacity required to support their massive SAP HANA data sets, as well as the high performance needed to quickly pull insights from that data.

Efficiency to make the most of your resources

Storwize family solutions support all-flash and hybrid storage platforms, making it possible for companies of all sizes to meet the specific needs of their SAP HANA environments, while also maximizing efficiency and managing costs.

Storwize systems are certified for SAP HANA Tailored Datacenter Integration (TDI)[2] giving customers increased flexibility to exploit highly efficient IBM Storage. TDI offers more openness and freedom of choice to deploy SAP HANA, compared to the appliance delivery approach, by utilizing new or existing hardware and infrastructure components in the data center.

The TDI approach limits up-front costs by removing the need to deploy an entirely new data center infrastructure, as customers using SAP HANA as an appliance would be required to do. When used with tested and certified storage systems like Storwize family, TDI helps limit risk and accelerate time to value.

IBM Storwize systems include built-in data management capabilities, delivered through Spectrum Virtualize, to maximize efficiency and keep costs as low as possible. These capabilities include:

- **Compression**, which minimizes the total volume of data you have to store, allowing you to experience guaranteed storage savings of up to 80 percent.[3]
- **Thin provisioning**, where only written data takes up physical capacity on a volume. As a result, thin-provisioned volumes generally have a virtual capacity that is much larger than their physical capacities.
- **Tiered storage with IBM Easy Tier®**, which automatically places frequently accessed data on the fastest responding storage, while moving data that is accessed less frequently to more efficient storage.

Storwize offerings increase efficiency and promote simplicity by allowing you to run your entire SAP environment on one storage platform. This would include SAP HANA itself, as well as the development, test, quality assurance (QA) and production workloads for all your SAP business applications.

IBM Power Systems

IBM Power Systems provide an ideal server platform for SAP HANA, with the unmatched flexibility, resiliency and industry-leading performance that mission-critical workloads demand. With Power Systems, organizations can simplify their IT infrastructure, decrease total cost of ownership, and maximize the benefits of SAP HANA. Like Storwize family products, Power Systems servers support the TDI program[4] and help maximize the resiliency, performance and efficiency of SAP HANA environments:

- **Resiliency:** Ability to use virtual footprints as failover targets.
- **Performance**: Support for simultaneous multithreading (SMT) with eight threads per core, four times higher than the SMT capabilities of any Intel-based platform.
- **Efficiency:** Virtualization capabilities based on IBM PowerVM®. This allows SAP HANA users to take advantage of dynamic capacity sizing, and therefore use only the compute resources they actually need.

Why IBM?

With IBM, you have the unique opportunity to get the storage and server solutions you need to optimize your SAP HANA environments from one trusted source.

IBM's role as a leading provider of storage and server solutions has been recognized by industry analysts. In 2017, Gartner placed IBM in the Leaders quadrant for its Magic Quadrant for General-Purpose Disk Arrays[5] for the fifth consecutive year, and for its Magic Quadrant for Solid-State Arrays[6] for the fourth consecutive year.

IBM and SAP also have a long-standing, proven partnership, with IBM receiving many SAP Pinnacle Awards over the years. Both companies recognize that in the modern era of computing, partnerships and strong technology ecosystems are essential to innovation that creates higher value for clients. IBM maintains a close relationship with SAP's technical and business teams. This collaboration continues to drive interoperability, optimization and innovation, allowing our joint clients to grow and thrive.

"With years of hands-on experience and unparalleled knowledge of SAP applications and industry processes, IBM is very well positioned to help our joint clients optimize storage for SAP applications, including SAP HANA TDI, to achieve competitive advantage."

— Kyle Garman, Global VP & GM, IBM Partnership, SAP

For more information

To learn more about IBM Storage and IBM Power Systems for SAP applications, contact your IBM representative or IBM Business Partner, or visit **ibm.com/storage** or **ibm.com/power/saphana.**

1 ITIC 2017 Global Server Hardware Server OS Reliability Results: IBM Power Systems Results Summary. (https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=POL03276USEN)

2 Certified and Supported SAP HANA Hardware Directory: Certified Enterprise Storage (https://www.sap.com/dmc/exp/2014-09-02-hana-hardware/enEN/enterprise-storage.html)

3 IBM Data Reduction Guarantee, (https://www.ibm.com/storage/compression-guarantee)

4 Certified and Supported SAP HANA Hardware Directory: Supported Power Systems (https://www.sap.com/dmc/exp/2014-09-02-hana-hardware/enEN/power-systems.html)

5 2017 Magic Quadrant for General-Purpose Disk Arrays (Published October 31, 2017, ID: G00319539) (https://www.ibm.com/systems/storage/disk-arrays)

6 2017 Magic Quadrant for Solid-State Arrays (Published July 13, 2017, ID: G00315723) (https://www.ibm.com/systems/storage/flash/magic-quadrant)

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