

SAP HANA & IBM POWER9

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A Softchoice e-Book



SO, YOU'RE MAKING THE SWITCH TO SAP HANA

SAP HANA is a business data platform from SAP that allows organizations to process huge quantities of data in real-time. Able to handle both transactions and analytics in-memory on a single data copy, SAP HANA is tailor-made for predictive analytics and machine learning. Its advanced built-in analytics and multi-model data processing engines make it ideal for innovative, next generation “system of intelligence” applications that drive the digital enterprise.

The business case for SAP HANA is clear: With SAP HANA comes a single, secure environment for mission-critical data assets, including massive volumes of structured and unstructured data. The database has the power to reduce IT workloads, simplify administration and enhance data-intensive processes like high-frequency transactions and complex data-modeling. Its flexibility allows organizations to grow, scale and adjust their environments on-the-fly as needed. The results are faster business outcomes and better return on investment (ROI) in the long term.

The transition to SAP HANA may also be one of the biggest tech migrations an organization will make in the next several years. Moving to and running SAP HANA is a massive shift with high potential for complexity. Nonetheless, for businesses running all or most of their mission-critical workloads on SAP solutions, the move may be necessary. SAP will end support for its base ERP offering, SAP ECC, in 2025. Meanwhile, SAP S/4HANA, the company’s newest suite of business technology products, runs only on the SAP HANA platform.

WHAT TO EXPECT – AND WHY NOT TO WORRY



Although it is a complex process, making the migration to SAP HANA doesn't need to be painful. There are several options when it comes to infrastructure, operating systems and implementation partners. To ensure your migration is as painless as possible, it's important to evaluate these options to make the best choice for your environment and intended outcomes.

In this guide, we'll outline the key considerations you need to make before embarking on your SAP HANA migration.

WHEN IT COMES TO INNOVATION, INFRASTRUCTURE MATTERS

Getting the most out of SAP HANA requires a deployment plan that yields the best business outcomes at the lowest total cost of ownership (TCO). This means designing an IT landscape that delivers optimal performance, scalability and adaptability along with minimal administrative effort and operating cost.

SAP offers a range of deployment options for organizations looking to take advantage of their existing on-premise infrastructure or move to a public or private cloud. Each option has its strengths and weaknesses. Organizations need to select the best path forward to SAP HANA for their existing environment and desired business outcomes.

SAP HANA IN THE CLOUD

SAP's Cloud Platform and Enterprise Cloud services let customers deploy SAP HANA with key cloud benefits, such as elastic scaling, per use and subscription licensing, under a fully managed service model. SAP also permits organizations to migrate licensed SAP HANA workloads to a public cloud provider, such as AWS, Azure or Google Cloud.

These options are best suited to organizations that:

- Need to build or run cloud-native apps with fluctuating workloads
- Have no existing infrastructure or do not intend to build a data center
- Prefer consumption-based pricing
- Have existing SAP licenses but require flexible scaling through an IaaS provider
- Plan to use a hybrid approach combining cloud and on-premise deployments

SAP HANA ON-PREMISES

Many organizations want to continue using proven IT processes and existing IT infrastructure investments while taking advantage of SAP HANA. SAP allows organizations to deploy SAP HANA on-premises with pre-validated and pre-packaged appliances, such as IBM Power Systems. Customers can also leverage SAP's tailored data center integration (TDI) offering. With TDI, those needing more flexibility can custom-build a deployment based on server, network and storage components from vetted hardware providers in the SAP ecosystem.

Deploying SAP HANA on-premise is ideal for organizations that:

- Need the fastest possible deployment of SAP HANA on-premise
- Must comply with industry-specific privacy, security or control standards
- Prefer to take advantage of significant existing infrastructure investments
- Want the greatest flexibility in selecting hardware and infrastructure components



For those outside the enterprise space, SAP also offers SAP HANA Edge, designed for small-to-medium businesses (SMBs) and SAP HANA Express – a basic configuration for students, those test-driving SAP solutions or independent application developers.

DATABASE PERFORMANCE WITHOUT COMPROMISE

Organizations run applications on SAP HANA to gain better real-time insights and faster business outcomes. To compete in the fast-paced digital marketplace, performance is critical. For organizations who need flexibility and resiliency to meet high workload demands, IBM POWER9 provides the ideal platform for data intensive workloads on SAP HANA.

IBM Power Systems is also the first platform to support virtualized instances of SAP HANA and can run as many as 8 SAP HANA production virtual machines (VMs) on one system.

Tailor-made for the era of big data, the platform leverages simultaneous multithreading to execute more threads per core than x86-based servers. They also handle more instructions per clock cycle. Even when a server nears capacity, IBM guarantees performance at a sustained 80% use level.

These organizations have achieved impressive performance improvements by deploying SAP business solutions on IBM POWER9:



40x

faster response times
for SAP ERP applications
(International Textile)



8x

improvement in
transaction speed
(South Shore Furniture)



73%

increase in customer
payment processing speed
(Ecogas)



INCREASE RELIABILITY. REDUCE TOTAL COST OF OWNERSHIP (TCO).

IBM Power Systems also optimize SAP HANA availability, allowing organizations to pre-empt failures using advanced self-monitoring and predictive failure alerts. Combining SAP HANA and IBM POWER9 hardware also yields the reliability and resiliency necessary to support mission-critical application workloads.



61% of IBM POWER9 users achieved 99.999% uptime for SAP HANA



This resulted in an average of fewer than 5.25 minutes of unplanned downtime per year



Only 1% of SAP HANA on IBM POWER9 users experienced 4+ hours of outages per year



Organizations running SAP HANA on IBM POWER9 have also channeled enhanced performance and resiliency into improved total cost of ownership (TCO) and return on investment (ROI).

One North American consumer goods company saved...

\$2.9million

over three years after investing in \$2 million in servers, representing a 140% ROI with a 6 month payback.

One South American petroleum company saved...

16%

when investing in a 1.5 TB SAP HANA configuration, and then achieved an 116% ROI over 4 years.

PREPARING YOUR DATA CENTER FOR SAP HANA

The connection between the operating system and the server platform is key to achieving high performance from SAP HANA. For this reason, the move to SAP HANA also calls for key considerations around the OS.

As of 2018, 60% of the America's SAP User Group (ASUG) ran SAP business solutions using a Unix- or Windows-based operating system (OS). As SAP HANA and S/4 HANA solutions only run on a Linux-based OS, those organizations may be facing considerable infrastructure adjustments to bring their data centers in line with SAP HANA requirements.

Red Hat and IBM have partnered for over 15 years to create integrated enterprise solutions through intensive co-engineering. IBM's recent acquisition of the open-source technology leader only serves to strengthen their joint solution for SAP HANA. Together, they offer greater flexibility for enterprise data centers to use multiple architectures, including IBM Power Systems, to establish one consistent operating system to run data-intensive SAP workloads.

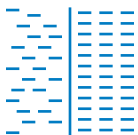


IBM + REDHAT + SAP HANA = OPTIMAL PERFORMANCE

This integrated solution from SAP, IBM and Red Hat provides a solid foundation of hardware and software foundation to support applications running on SAP HANA.

- **IBM Power Systems and IBM POWER9** are purpose-built to deliver the necessary high performance, flexibility and resilience for mission-critical SAP HANA workloads.
- **Red Hat Enterprise Linux for SAP Solutions for Power, LE** combines IBM's server capabilities with the leading enterprise Linux OS to help organizations get the most out of SAP HANA. It also includes automatic non-uniform memory access (NUMA) balancing and SAP-specific tuning profiles to help users maximize performance.

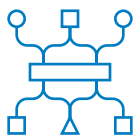
Tapping into this combination allows organizations running SAP HANA in the cloud, on-premises or in a hybrid model to:



- **Enhance server density and capacity** through the virtualization of up to 16 SAP HANA workloads per IBM POWER9 server. Add cores and memory without the need for reconfiguration or recertification by SAP.



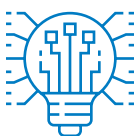
- **Gain deployment flexibility** by using same architecture whether you're deploying SAP HANA on-premise, in the cloud or using a hybrid model. Use logical partitions to support requirements for a multisystem environment on a single server.



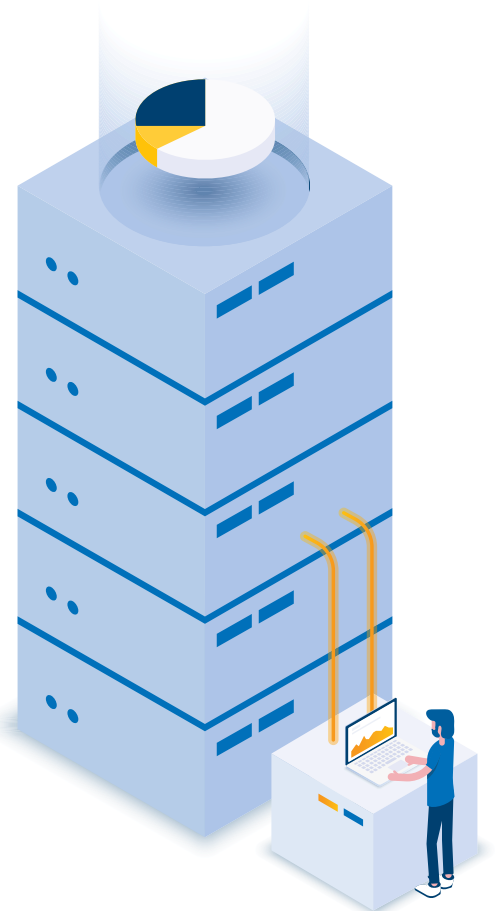
- **Run mixed workloads** by combining production and non-production workloads under a single operating system. Operate memory- and input/output (I/O) intensive workloads side-by-side and reallocate resources to accommodate fluctuating demand.



- **Boost memory performance** with 32TB of memory bandwidth and Red Hat Enterprise Linux's efficient, balanced memory management algorithms. Gain peace of mind through IBM's data corruption-resistant chipset engineering.



- **Increase IT agility** by reusing server, storage and network resources under SAP's tailored data center integration offering. Reduce overhead expenses by consolidating SAP HANA workloads onto fewer physical systems.



FACING THE REALITIES OF YOUR SAP HANA TRANSITION

If performance on SAP HANA is a high priority, you should consider solutions best equipped to give you an advantage when driving your business through digital innovation.

If you're planning to all or some SAP HANA instances on-premises, the related challenges are best handled by a solution that offers:



Power: designed to handle data-intensive, cognitive and analytics workloads powering “systems of intelligence” applications.



Out-of-the-box virtualization: ready to consolidate multiple workloads onto one system to share compute, network and storage resources.



Resiliency: primed for high availability, failover and uptime and equipped to provide predictive failure alerts.



Credibility: vendors with a long-standing relationship with SAP and proven track record in data center architecture, deployment and management.



Softchoice delivers best-in-class technology combined with a data-driven approach designed to meet your unique business requirements. Work with Softchoice to deliver hybrid IT to your environment. With guidance from our experts, you'll determine the best locations for your business-critical application workloads and ensure your data center transformation succeeds.

**Want to dive deeper on IBM Power Systems and SAP HANA?
Get the latest from Softchoice and IBM in our partner showcase.**

READY TO START YOUR DATA CENTER TRANSFORMATION?

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