White Paper

Who Can Benefit from SAP HANA Database and S/4HANA on IBM Power Systems?

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IDC OPINION

The road to SAP HANA and SAP S/4HANA is paved with uncertainties, no matter how well intentioned SAP SE has been with its renewed focus on customer needs and benefits. From an infrastructure perspective, the demands that the in-memory database and the integration of transactions and analytics impose on the underlying hardware are significant. As little as a few years ago, businesses had limited choice in terms of hardware – appliances available for SAP HANA only ran on commodity architecture, and many of those were not sufficiently equipped for the flexibility, performance, and reliability that HANA and S/4HANA demand.

Since late 2015, HANA has also been available on IBM Power Systems with IBM's innovative IBM Power Systems architecture and processors. IDC believes that Power Systems is a strong differentiator for SAP HANA and S/4HANA. Power Systems is designed for very data-intensive workloads such as HANA, with powerful built-in virtualization that is SAP certified and numerous reliability features.

Power Systems use cases are not the same for all SAP customers. IDC believes that there are four types of businesses that can significantly benefit from running SAP HANA and/or S/4HANA on IBM Power Systems. They are:

- **Businesses with HANA appliances due for a refresh.** These businesses can reduce scale-out sprawl, increase flexibility, obtain greater reliability, improve performance, and consolidate hardware to decrease overall total cost of ownership.
- **Businesses on commodity architecture moving to SAP HANA.** These businesses typically run a virtualized datacenter and can take advantage of the virtualization capabilities of IBM PowerVM and the infrastructure-as-a-service capabilities of IBM PowerVC, which integrate seamlessly with OpenStack.
- **Businesses with a traditional database and SAP applications on IBM Power Systems.** These businesses will get a database performance boost, easier administration, faster processing of vast data volumes, and a much faster user response time for transactional processing.
- **Businesses on IBM Power Systems that currently do not have SAP.** These businesses can start taking advantage of IBM Power Systems and run more SAP HANA production instances than on commodity systems.

What all these businesses have in common, is that, with IBM Power Systems, they have an easy path to a strong SAP HANA or S/4HANA platform that provides significant advantages. There is also support from many corners to embark on such a journey. Furthermore, even if Power Systems is unfamiliar to an organization, the platform runs Linux, thus posing no skill set issues, and integrates easily with any virtualized datacenter, thanks to its OpenStack-based virtualization.

SITUATION OVERVIEW

The switch to an SAP HANA in-memory platform has become less unsettling than it was a few years ago. Many businesses have completed the first step with a migration to SAP Business Warehouse (BW) on SAP HANA. BW is a good starting point for an SAP HANA in-memory database because the immediate performance improvements yield a high ROI and because BW is not considered an "enterprise critical" application – hence it is less complicated.

A significant portion of SAP customers worldwide have now purchased BW on HANA, with a majority live and in production. Most of these SAP HANA customers are running HANA as an appliance built on commodity architecture, because this was the only option four years ago. Many of these early adopters are now due for a technology refresh.

Deployment Options for HANA and S/4HANA

There are about a dozen vendors that offer HANA appliances on commodity architecture with various SAP-certified configurations in terms of memory size and socket counts. Some of them also offer Tailored Datacenter Integration (TDI), which is a more versatile alternative to an appliance. It allows customers themselves to combine certified infrastructure components for their SAP HANA environment.

While appliance vendors all offer slightly different value propositions, only IBM with Power Systems offers a distinctly stronger per-core performance, thanks to its processor technology. Power Systems processors are designed for intense data processing. Also, Power Systems has a built-in SAP-certified virtualization solution that provides flexibility and availability advantages. Power Systems is only offered as a TDI solution to give businesses the greatest amount of flexibility.

This white paper takes a closer look at HANA on IBM Power Systems and addresses four customer types that can take immediate advantage of the benefits of HANA and S/4HANA on Power Systems.

SAP HANA ON POWER SYSTEMS

IBM is positioning itself as the S/4HANA expert that can provide a complete S/4HANA package – from strategy setting and functional specification with its Global Business Services (GBS) unit to implementation and Power Systems hardware for on-premise and as a hybrid cloud. In April 2016, IBM and SAP SE announced a "digital transformation" partnership to innovate solutions around cognitive extensions, user experiences, and industry-specific functionality with S/4HANA. There are multiple reasons why IBM Power Systems is an excellent platform for SAP HANA, centered on the exceptional flexibility, resiliency, and performance of the platform.

Flexibility of HANA on Power Systems

The IBM Power Systems platform gives businesses a greater amount of agility and variability than would be possible with an appliance, including during the initial transition from an existing database to HANA. Businesses can consolidate multiple SAP HANA databases on a single Power Systems server. This provides greater speed and flexibility and avoids the complexities of a bare metal installation. Using PowerVM, organizations can currently virtualize up to eight production SAP HANA virtual machines (VMs; logical partitions [LPARs]) on a single Power System (IBM expects this number to grow), and they can mix nonproduction HANA instances and traditional workloads on the same system. The result is very efficient workload consolidation, requiring fewer servers while maximizing the utilization rates of the processors. The utilization rates of Power processors are demonstrably higher than with commodity architecture, which translates into substantial cost savings for businesses.

For example, a business could carve out a VM to run traditional error checking and correcting (ECC), another to run BW HANA, another to start a sandbox S/4HANA project, and a few virtualized VMs for application service. Such a combination would be impossible on an appliance on commodity architecture because of SAP rules. What's more, instead of the so-called T-shirt sizes for HANA appliances, which are jumps in the numbers of CPUs that can be added to increase capacity, PowerVM allows for more granular scaling and dynamically changing allocation of system resources. This means businesses avoid adding new hardware that would have caused higher energy, cooling, and management needs.

Resiliency of HANA on Power Systems

IBM Power Systems enterprise-class servers are included in IDC's highest category for fault tolerance with more than 99.999% uptime.

Resiliency is critical for an in-memory database like SAP HANA and for business-critical applications such as SAP ECC or S/4HANA. IBM Power Systems has an undisputed reputation for its built-in RAS features, and these now extend to SAP HANA on Power Systems. Indeed, since 2016, IDC has included IBM Power Systems enterprise-class servers in its highest category for fault tolerance – availability Level 4, which represents more than 99.999% uptime. Note that the performance metrics of Power are measured with these built-in RAS features. On commodity systems, memory-related RAS features are often optional – they increase reliability at the expense of performance and are usually not weighed in performance claims.

Resilient application landscapes require an extra passive node for failover. But with a Power scale-up system (scale up is ideal for S/4HANA), the built-in virtualization allows for a VM to be the designated failover target. This VM can even be used for test and development while in standby mode on another node. This, again, contributes to a reduction in footprint and a lower TCO. Because of limited virtualization possibilities, this is not an option on SAP HANA appliances.

To prevent failure, Power Systems uses heuristics that run in the background during SAP HANA processing and that deliver predictive failure alerts to the administrator. These alerts serve as warnings that a failure is likely to occur rather than saying – after the fact – that a failure has occurred. An administrator can then take immediate action and move the live workload to another VM before it is affected by the anticipated failure, greatly improving business continuity.

Power Systems also – by default – features Chipkill memory, an error checking and correcting technology that protects against memory chip failure by taking a failing chip out of the ongoing processing. This prevents data loss and allows businesses to keep throughput levels high while the

memory remains protected. On commodity architecture, comparable technology is an option; when turned on, Chipkill affects performance. In addition, Power Systems provides memory rank sparing, which consists of an extra chip that can receive the data from a failing chip and take over the failing chip's tasks. This avoids having to do memory mirroring, which reduces a system's total available memory.

Performance of HANA on Power Systems

SAP HANA is very data intensive, and the IBM Power processor was designed for such workloads. Power features eight-way simultaneous multithreading versus two-way multithreading on commodity processors. This means that Power can process up to four times as many instructions at the same time, a major contributing factor to the processor's higher per-core performance. It also means that the same workload can run on a fewer number of cores, which translates into lower licensing costs and — again — lower datacenter footprint and energy use and improved staffing benefits. What's more, it means that a workload can run on a single system rather than a cluster, avoiding the complexity and sprawl of clusters.

As an in-memory database, SAP HANA is hungry for memory capacity. The Power scale-up portfolio provides abundant memory — up to 64TB — more than any appliance available today. This massive memory footprint has the added benefit that it allows multiple HANA and SAP systems to be consolidated on the same physical server. SAP HANA also likes high memory bandwidth, which Power provides at a rate of 230GBps. IDC does not compare performance metrics such as memory bandwidth, but we recommend that readers do, because higher memory bandwidth translates directly into faster results for the business. Power Systems also features very large L2 and L3 cache plus — uniquely — an L4 cache. The large cache further boosts HANA's performance as data stored in the cache can be accessed much faster than data held in memory. Again, the benefit to the business is faster results.

Finally, it is worth noting that Power Systems is equipped with a technology called single instruction, multiple data (SIMD) vector processing, which provides yet another performance boost to columnar in-memory databases like SAP HANA. SIMD refers to an in-memory database's ability to process multiple elements of data as a single instruction.

Scalability of HANA on Power Systems

Businesses that are looking to scale up SAP HANA infrastructure need to consider Power Systems in their evaluations. This includes businesses with BW on HANA on scale-out infrastructure that are planning to add Suite on HANA or move to S/4HANA, because SAP requires scale up for Business Suite and S/4HANA. Power Systems' ability to scale in the box, while leveraging virtualization capabilities and running multilayered partitions, is exceptional. Note that both the Power Systems Enterprise and the S-class model types can be used for either scale up or scale out (i.e., multinode HANA installation). For SAP HANA scale up, all the resources have to fit on a single Power Systems server or on a VM inside it. Also, multiple single-node HANA databases and other workloads can be consolidated on a single server.

One of the key contributing factors to the near-linear scalability (meaning, the performance increases at the same rate as the number of processors) of the scale-up Power Systems to 16 sockets is the fabric bus. The bus interconnects all the processors and is designed for maximum throughput.

For scale out, the network between the nodes and the failover architecture need to be planned, but on Power Systems, SAP HANA scale-out setups can also consist of multiple VMs residing on a single server. For example, a 16TB BW on eight 2TB scale-out commodity architecture appliances can be migrated to a 16TB VM on a single scale-up Power Systems server.

For achieving high availability (HA), SAP allows a "Cost Optimized Replication Scenario," which gives an organization the ability to host nonproduction workloads on a standby Power Systems server as long as 10% of the production resources are allocated to supporting system replication. This scenario helps businesses avoid the need for a costly passive failover node.

PowerHA for Linux provides the capability to manage HA operations for SAP HANA system replicator deployed configurations. With many of the same features and functions as PowerHA for AIX, PowerHA for Linux provides a robust solution operationally similar to PowerHA for AIX. PowerHA for AIX and Linux provide an advanced UI, enabling customers to monitor and manage HA operations for both AIX and Linux cluster deployments from a single pane of glass.

Cloud with HANA on Power Systems

Power Systems for HANA provides both public and private cloud deployment options. The public cloud options include IBM Cloud and multiple third-party hosting solutions. IBM is also an SAP partner for the HANA Enterprise Cloud offering.

SAP expects many of its customers to move to a hybrid cloud and is focusing its offerings on this trend. The latest release of SAP HANA Cloud Platform allows businesses to incorporate new cloud functionality with existing on-premise business applications. This includes an API Business Hub that gives developers, customers, and partners easy access to APIs for HANA Cloud Platform and other SAP applications. A version of SAP Solution Manager for SAP S/4HANA customers that helps manage software environments that are partially on-premise and partially on a cloud was also recently released. Hybrid cloud is core to the direction that SAP and IBM are taking in their partnership, and Power Systems servers have outstanding capabilities to serve as a private cloud or hybrid cloud for HANA.

For businesses that are concerned about moving their mission-critical production SAP workloads to a public cloud, a resilient, on-premise private cloud on Power Systems is a comprehensive, future-oriented solution. From the perspective of the business, the advantage of a private cloud on Power Systems is that it does not need to concern itself with what's "behind the curtain." What matters is that the system works, that the system is secure and reliable, that SLAs are met, and that the business is paying for the system like a utility. From the perspective of a cloud service provider, the benefit of a cloud on Power Systems is the ability to reliably serve more customers on a smaller footprint — in other words, more revenue with less infrastructure.

IBM Power Systems provides multiple cloudlike functionalities. The platform features Capacity on Demand that enables a business to turn on and pay for cores only when it needs them and then turn them off for cost savings. Organizations can also bring up SAP via PowerVC based on OpenStack, which can be used in combination with other cloud solutions, including SAP's Landscape Virtualization Manager (LVM) and VMware's vRealize/vCloud. This enables organizations to run their Power Systems server as a cloud with all the cloud functionality that OpenStack delivers. In addition, IBM PowerVC based on OpenStack is a robust tool for virtual machine setup and management. It lets a business fully virtualize, automate, and orchestrate its SAP environment from a single pane of glass.

BUSINESS CASES

Coop Group

Coop Group is one of Switzerland's largest supermarket chains headquartered in Basel. The company manufactures, distributes, and wholesales foods, delivering goods to restaurants, hotels, and staff cafeterias across Europe. Coop Group employs almost 86,000 people and generated annual sales of CHF29.2 billion in 2017.

Coop decided to provide an integrated shopping experience by letting customers collect online purchases from their local store at a time that fits best for them. However, ensuring that inventory information is always accurate and that the products customers order online are actually available for collection in their preferred store at their preferred time is a major challenge. To offer this service, Coop needed to transform internal processes and gain almost real-time insight into stock levels at all locations. With data growth of 30% each year, Coop needed a flexible IT solution that would support its retail strategy without reducing performance, increasing costs, or adding to the management and administration workload. Coop Group runs a full suite of SAP applications to manage the business, including the mission-critical SAP Customer Activity Repository application on the SAP HANA platform. In the past, Coop had to cut down the volume of data used for SAP Customer Activity Repository analytics because of the limitations of the commodity infrastructure it was using. This made it difficult to gain a near-real-time overview of inventory movement.

Coop Group says it closely worked with teams from IBM and SAP to migrate the company's SAP Customer Activity Repository database from a complex eight-node x86 cluster to a single SAP HANA database on IBM Power Systems, with 70% fewer processor cores and more memory. According to Coop, this move enabled it to achieve five times better performance and it was able to complete the implementation and migration phases in less than two months. The scalability and virtualization capabilities of the IBM Power Systems platform were key factors behind its decision to move to the SAP HANA environment. Using IBM PowerVM functionality, Coop replaced a number of physical appliances with virtual servers and achieved high levels of consolidation, saving floor space as well as reducing energy costs.

Today, Coop says it has near-real-time insight into inventory data. Running SAP HANA on IBM Power Systems also allowed Coop Group to simplify and streamline its IT environment, thereby improving its ability to scale to meet growing demand. With IBM Power Systems and PowerVM virtualization, Coop claims that it can provide resources much more efficiently. In the past, if it needed to provision large new SAP HANA systems, Coop had to buy, install, and configure new physical appliances. Today, it can spin up new logical partitions as and when needed, making the process of provisioning new SAP HANA systems significantly faster.

Freudenberg IT

Freudenberg IT (FIT) GmbH & Co. KG is a global managed IT services provider with 400+ customers and 125+ SAP HANA worldwide installations. It was founded in the German town of Weinheim and has grown to acquire a global presence spanning Europe, the Americas, and Asia.

FIT needed to find a more cost-effective way to satisfy customers' growing appetites for SAP HANA instances to outshine competition in the crowded IT services market. FIT says it was one of the early adopters of SAP HANA when it was only available as an appliance. After a few years, it was running SAP HANA systems for 180 clients. Each customer required separate boxes for its development, QA,

and production environments, so in total FIT was running 540 appliances. This started to put a serious strain on the space available in FIT's datacenter, to the point where the company needed to enlarge it or possibly even build a new one. FIT realized that to provide better hosting services more cost effectively, it needed a better way to manage its SAP HANA systems.

FIT says it chose to migrate its client SAP HANA instances to IBM Power Systems and virtualized them using IBM PowerVM. Given that FIT was running so many SAP HANA instances for such a large number of clients, it was critical that the company choose the right infrastructure. FIT found that IBM Power Systems represented by far the most cost-effective option for running SAP HANA to support multiple client systems.

With IBM Power Systems, FIT can run multiple SAP HANA instances for different clients on a single physical server. Thanks to advanced virtualization from IBM PowerVM, each client's system resides in its own logical partition on the server, making the sharing of physical infrastructure between clients highly secure. The LPARs can be sized precisely to fit each customer's needs, so FIT achieves superb server utilization. And as client systems grow, FIT can easily resize the LPARs in a completely transparent manner, without the client incurring downtime.

FIT says that it is now running SAP HANA instances for nearly 50 clients on just 9 IBM Power Systems servers, which equates to running 5.55 clients on each IBM Power Systems server rather than needing 3 appliances to support each client. Running fewer physical servers helps FIT reduce energy consumption and costs, allowing it to pursue a greener IT strategy.

FOUR CUSTOMER TYPES THAT CAN BENEFIT FROM HANA ON POWER SYSTEMS

Businesses with HANA Appliances Due for a Refresh

Many businesses started their HANA journey as many as four years ago with HANA appliances on commodity architecture. This was the only solution available at the time. They are now facing a costly scale-out expansion or possibly a complete technology refresh. Given their lower reliability, appliances on commodity architecture are often sold in multiples for failover purposes. This practice has been causing datacenter sprawl, with related cooling and energy, maintenance, and staffing costs. The reliability concerns with appliances also point to a larger issue, which is that, today, BW may not be mission critical but tomorrow S/4HANA will be.

Now that HANA is available on Power Systems, businesses with BW on an appliance can evaluate if they would benefit from moving to HANA on Power Systems to reduce sprawl, increase flexibility, obtain greater reliability, improve performance, and consolidate fewer workloads on a smaller footprint. A switch to Power Systems will not lead to skill set complications — businesses will be running HANA on the same Linux operating system.

TDI may be unfamiliar to the businesses, but it need not be a hurdle. TDI offers much more flexibility when it comes to selecting the right server, storage, and networking hardware for integrating SAP HANA in the datacenter. For customers that do not have any Power Systems in the datacenter, TDI involves choosing the right Power Systems, selecting an SAP TDI-certified storage solution, following SAP best practices for networking, and performing the software installation according to SAP requirements. IBM's GBS, SAP Active Global Support, and any number of third-party systems integrators that are certified SAP HANA installers can provide support.

IDC recommends that businesses with HANA appliances on commodity architecture that are due for a technology refresh or are reaching end of lease, or businesses that are considering an infrastructure change for other reasons (for example, a mandate to move to hybrid cloud), consider HANA on Power Systems.

Businesses on Commodity Architecture Moving to SAP HANA

Businesses that are running their datacenter on commodity architecture that have not yet moved to SAP HANA now have a choice between appliances on commodity architecture and Power Systems. Even if they have never had Power Systems in the datacenter, bringing the platform in today provides a powerful Linux system with significant processor benefits. IBM recently added dozens of new SAP HANA on Power Systems customers that did not have Power Systems before and were satisfied with the Power Systems architecture.

Some clients have some hesitance regarding TDI, if the business is not familiar with its definition. SAP provides good resources regarding TDI for Power Systems, and IBM's approach to TDI is identical to what SAP prescribes. Also, IBM's business partners and resellers are helping businesses implement TDI. Some resellers offer a slightly different approach by creating bundles of the required hardware components, services, and the SUSE operating system. These are not appliances, but they are sold as a package.

These potential HANA customers typically run heavily virtualized datacenters. What they will appreciate about the SAP HANA on Power Systems platform is its powerful virtualization capabilities and the fact that PowerVM and PowerVC integrate seamlessly with OpenStack management tools. This makes it easy to integrate HANA on Power Systems with their existing virtualized infrastructure.

Businesses with a Traditional Database and SAP Applications on Power Systems

There are many businesses that run their SAP business applications on IBM Power Systems with a traditional database, such as Oracle or DB2. For them, a move to HANA (BW on HANA, Suite on HANA, or S/4HANA) involves their mission-critical processes and data. On the other hand, migrating to SAP HANA on Power Systems will provide businesses with a significant database performance boost, easier administration and processing of vast volumes of business data, and faster user response time for transactional in-memory processing.

Businesses can also take full advantage of the server, storage, and networking choice with TDI, including cost savings from using existing IT assets such as their installed Power Systems. As the transition to SAP HANA-based applications proceeds, these businesses can easily shift resources from the traditional environment to the growing HANA portfolio.

Businesses on Power Systems That Do Not Have SAP

Quite a few businesses, including many AS/400 customers, are running Power Systems with a non-HANA database and business applications from vendors other than SAP. For these organizations, a move to SAP HANA or S/4HANA means a migration of both the database and the applications, which essentially means changing their business environment. This is not an easy decision.

Many of these businesses prefer to remain on Power Systems, because they are invested and know Power Systems, which makes migration easier. What's more, once they have started a discussion to migrate off their traditional RDBMS, they are typically not looking to replace it with another traditional

RDBMS. This essentially leaves them with two options: an open source database solution (e.g., EnterpriseDB) or SAP HANA on Power Systems.

As discussed previously, HANA excels on high-performance hardware such as Power Systems – as an in-memory database, it performs best with the high-quality memory and large memory spaces that Power Systems provides. What's more, HANA runs most efficiently on a single node. Businesses with scale-up Power Systems that do not run SAP can immediately start taking advantage of HANA or S/4HANA, and they can do so carefully by starting on one or two VMs and then expanding. This allows them to remain on their preferred platform while gaining the magnified performance of the in-memory HANA or S/4HANA platform on Power Systems.

AVAILABLE POWER SYSTEMS MODELS AND SUPPORT FROM IBM AND SAP

IBM currently offers four Power9 models that run HANA: E950, E980, H922, and H924.

IBM provides an end-to-end solution for SAP HANA on Power Systems that includes planning, installation, operation, problem resolution, ongoing end-user support, and migration. In terms of infrastructure, the solution includes Power Systems hardware, integrated virtualization, tested flash storage, and IBM's GBS and Lab Services. For example, GBS as well as third-party systems integrators can evaluate any business' requirements for an SAP HANA or S/4HANA strategy via workshops or engagements. IBM's Lab Services helps make migration easy, with expert consultants helping businesses mitigate the risk of migrating by building a tailored infrastructure strategy for flexible virtualization and superior performance and capacity management.

Consultants at IBM's Lab Services make migration easy and low risk by building a tailored infrastructure strategy for flexible virtualization and superior performance and capacity management.

A move to S/4HANA can provide an opportunity to streamline the infrastructure because S/4HANA delivers simplification of the application and the platform. A significant reduction in the required number of application servers could be one outcome, for example. IBM also supports businesses with POC efforts, even a small-scale POC to start a project. A small-scale POC is easy to initiate – if a business has some capacity on installed Power Systems, it can carve out a small VM (e.g., 256GB) and start a sandbox S/4HANA. Another way to start would be on H922.

SAP offers various tools for determining the right-size hardware (CPU, memory, and disks) both for customers that are starting with a greenfield installation and for those migrating from a traditional database to HANA. Customers that are considering SAP HANA for the first time can use SAP's Quick Sizer tool that demonstrates how to start a new project.

CHALLENGES/OPPORTUNITIES

For Businesses

Businesses that see their future for business analytics on SAP are getting comfortable with HANA and S/4HANA, yet some new concerns are emerging. Running analytics and transactions on the same system, as with S/4HANA, demands strong performance to manage vast amounts of data, uncompromising resilience to protect in-memory processing, a large amount of flexibility from virtualization and hybrid cloud deployments, and easy manageability. Not all hardware available for SAP HANA and S/4HANA today can optimally deliver on these requirements. Businesses that are

evaluating hardware options for SAP HANA or S/4HANA should investigate the benefits of SAP HANA on Power Systems. These businesses have an opportunity to consolidate and simplify on Power Systems while magnifying the performance gains that SAP HANA and S/4HANA can provide.

For IBM

IBM is differentiating itself in the SAP HANA infrastructure market with an end-to-end solution for running SAP HANA — from the server, storage, services, and support to the software. IBM also provides flexibility to reuse existing server and storage investments with TDI and delivers built-in virtualization that supports the extreme workload density of HANA production instances. These strengths help the type of customers discussed in this white paper decide whether they can benefit from a transition to SAP HANA on Power Systems. However, migrations are never easy. IBM will have to deliver on its stated goal of being the S/4HANA expert in the industry, functionally with GBS as well as infrastructure-wise with Power Systems. The company also has to make sure that potential customers see IBM as a vendor that can support them with all aspects of their SAP strategy without the perception that only the largest among them can afford such a full-service partner. Those potential customers that do not have Power Systems servers in the datacenter today may need to take small steps with POCs and with support around TDI. If no project is too small for IBM, this presents a good opportunity to attract new Power Systems customers.

CONCLUSION

IDC is always of the opinion that IT diversity and choice is a good thing. The hardware environment for SAP HANA had been lacking in this respect. There was choice among vendors, but not with regard to the processor and its performance, the virtualization strength of the platform, or the way in which SAP HANA platforms were only sold as an appliance. The enterprise and scale-out Power Systems models that are now available for HANA and S/4HANA add a significant new dimension to the options that businesses have, especially if they have S/4HANA in their sights.

Because of Power Systems' stronger per-core performance, built-in virtualization, and well-known resiliency, it is no longer a risky proposition for businesses to put their mission-critical data in an in-memory database on a smaller footprint and without an extra passive node for failover — this white paper describes in detail why. Instead, these businesses gain enormously in flexibility — with the transition to SAP HANA as well as once they are in production; they benefit from the Power Systems' performance in the form of faster business results and can cut costs, thanks to the smaller footprint and all of the associated costs.

Businesses that do not have Power Systems in the datacenter today should take the leap and investigate how they could benefit, whether they are already running SAP on appliances or not. Businesses that do have Power Systems but no HANA can take smaller steps by leveraging their existing infrastructure. The bottom line for all businesses is that they now have a real choice.

About IDC

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