S/4HANA without compromise

A modern ERP architecture needs a powerful and future-proof platform

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S/4HANA is a game-changer for SAP customers, delivering a step-change in performance and flexibility. Live transaction data can be used for real-time/embedded analytics, and your ERP environment can become an operational data hub - even for fast-moving IoT feeds. But to unleash the full potential, you need a scalable and robust foundation for your S/4HANA system. Platforms based on vertically integrated hardware and software stacks that exploit modern RISC-based processor architectures have become very relevant in this context.

How high-scale, vertically integrated systems can help

Key system characteristic

Why this matters

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Platforms are engineered using high-end components designed from the outset to work together optimally in a high performance manner, including CPUs, RAM and I/O subsystems.	Extreme performance and efficiency as faster processors, RAM, and system interconnects combine to reduce the bottlenecks and resource limitations that constrain in-memory database throughput.
Tight integration throughout the entire systems stack, from the hardware up through the operating system and virtualisation layers, with high redundancy and security baked in at every level.	Highest degree of inherent robustness and reliability, while avoiding the vulnerabilities that often arise from the gaps and disjoints when systems are based on commodity components from different sources.
Highly granular virtualisation, partitioning and resource management facilities, allowing both fixed and dynamic workloads to co-exist in the same environment with a single over-arching management plane.	Multiple SAP modules, instances and generations can be co-hosted to support hybrid deployments and more complex ERP landscapes, delivering efficiency and flexibility, while protecting service quality.
Support for smooth and cost effective growth within a single machine and/or expansion via clustering, while preserving the benefits of tight integration to ensure maximum performance and integrity.	Avoids running into the 'law of diminishing returns' when adding capacity to your SAP environment, allowing you to start small and grow at your own pace to support phased migrations without compromise.

Other things to think about

While we've majored on S/4HANA in the use case above, the kind of platforms we've been discussing tend to be inherently more flexible and efficient than a purpose-built Intel-based landscape. We've already mentioned support for hybrid running - mixing and matching old and new SAP architectures, for example - but if your priority is simply re-platforming your existing ECC environment, a lot of the same benefits apply. In addition, the use of high-end processors with more powerful cores can help to reduce software costs with older SAP systems in particular, e.g. in relation to traditional databases licensed on a per-core basis. Either way, you will be well set up for the future.

Real-world solution example: IBM Power

A good example of a high-scale, vertically integrated platform that exploits a modern RISC-based processor architecture is the Power® platform from IBM®, the sponsor of this paper. While it is not the only platform of this kind on the market, and of course nothing we say should be taken as an endorsement or recommendation of any vendor or offering, it can be very useful to drill into a real-world example.

The Power platform itself has been around for many years, and over its lifetime has been a common target for SAP implementations. As part of a long-running partnership, IBM has worked proactively with SAP to ensure that the platform is optimised for use in both smaller and larger-scale ERP environments. During the development of the latest iterations of Power, IBM paid particular attention to meeting the needs of S/4HANA, although the fundamental Power architecture was already well suited to support in-memory databases.

Some of the specific advantages IBM calls out as particularly relevant to S/4HANA include the ability to address significantly more memory than is usually possible with Intel machines, along with the superior speed and robustness of the memory modules used, and much faster interconnects between memory and CPU. The upshot is greater throughput and scalability for a given physical footprint, as well as less energy consumed along the way. There's also an advantage when it comes to system startup and restart times, during which databases can be (re)loaded into memory much more quickly - an important consideration in disaster recovery scenarios, say.

Overarching all of this, IBM highlights that Power-based SAP landscapes tend to be a lot simpler and easier to manage than Intel equivalents. While you always need to assess and size your systems based on your specific requirements, IBM's claims here do make sense and are backed up by real-world customer examples. You'll have to contact IBM directly to learn more about this, and other aspects of Power that may be relevant to your SAP migration plans that we can't cover here (see below).

About the Power Perspective series

This document is one of a series of similar pieces looking at how high-scale, vertically integrated systems can provide tangible business benefits in context for a range of different themes. Other Power Perspectives include:

Supporting the needs of highly unpredictable workloads
It's all about flexibility, scalability and cost effectiveness

Getting real about IT sustainability
From good intentions to tangible results through smart systems selection

Have you made the right platform choices to minimise risk?
Critical systems have to run and run

Don't let your smart software suffer from poor system choices
Mismatched AI and analytics can be massively inefficient

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