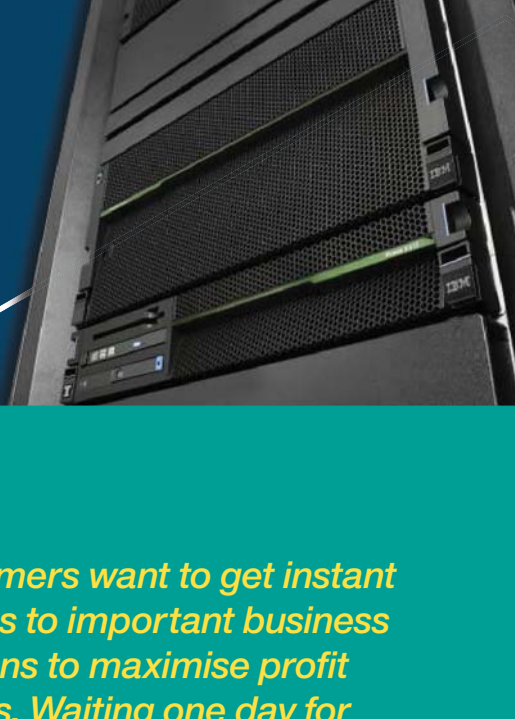


SAP HANA ON IBM POWER SYSTEMS – THE BEST OF BOTH WORLDS



THE CHALLENGE

The quantity of structured and unstructured data available to organisations is soaring – and they are relying on it more than ever:



Despite the importance of such information, many organisations struggle to simplify the complex nature of all the data streams available to them.

“Customers want to get instant answers to important business questions to maximise profit margins. Waiting one day for the latest figures is becoming an issue when businesses are moving faster than ever before and market dynamics change quickly.”

Léon van den Bogaert, Manager Cloud Technology, CTAC

“Unleashing the power of that information by transforming it into actionable insights and business results is critical to organisations of every kind. Finally, IT managers and staff are being required to deliver increasingly sumptuous results with little or no increase in their emaciated budgets.”

PUND-IT

THE SOLUTION: SAP HANA ON IBM POWER

IBM Power Systems™ provide the highest flexibility, resiliency and performance in the market. When combined with SAP HANA® and SUSE® Linux Enterprise Server, businesses will benefit from faster transactions, better data management, openness and innovation.

IBM Power Systems – Secure, flexible and resilient servers, plus

- ✓ Higher memory and processor throughput than Intel for faster business results
- ✓ Virtualise workloads on fewer systems to minimise costs
- ✓ Ability to add resources as needed to support changing business needs

SUSE Linux Enterprise Server for SAP Applications provides;

- ✓ High availability with automated failover, including the SAP HANA database
- ✓ Operating system and in-memory data security hardening
- ✓ Simplified, automated SAP HANA installation and management
- ✓ Linux page cache management to sustain SAP application performance

SAP HANA Platform – In-memory database management system, plus

- ✓ Faster reporting for real-time business decisions
- ✓ Predictive analytics for future probabilities and trends
- ✓ Proven enterprise architecture for SAP

24x7
Perfect for 24x7 enterprise-ready operations

THREE REASONS WHY THIS IS THE PREMIUM SOLUTION FOR SAP HANA DATABASES

1 SIMPLE

This solution includes best-in-class virtualisation and capacity on demand, enabling growth without having to buy and provision new servers.

Virtualisation

Up to 8 instances of SAP HANA can run on one POWER8® server. Commodity servers can generally only run 1 instance.

SAP supports the use of virtualisation based on integrated hypervisor technology (IBM PowerVM), consolidating multiple SAP HANA virtual machines on a single system.

This helps consolidate landscapes onto fewer servers, while keeping usage rates for processors high, even with fluctuating demand. In turn, this leads to greater efficiency and lower total cost of ownership.

Capacity

IBM Power Systems have dynamic capacity on-demand, allowing better management of peaks and troughs in demand.

The virtualisation engine reduces the number of required footprints, which has cost-related advantages, and makes the footprint more flexible – users can expand and contract capacity, move and add additional workloads onto spare capacity within the enterprise.

“The technical qualities driving SAP HANA’s success are impressive, but the remarkable flexibility of SAP’s strategy is every bit as important.”

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2 SMART

Many vendors consider mission-critical reliability to be an optional extra – but it is built into IBM Power Systems as standard.

- Average of just 3.5 minutes of unplanned downtime per server per annum, best in class for all server platforms running Linux.
- SUSE Linux Enterprise Server for SAP Applications comes with two packages that support SAP HANA system replication, an intelligent locking mechanism to maintain data integrity, and tools to help your IT team automate SAP HANA system replication.
- Intelligent memory protection to detect and correct potential faults before impacting a running application.
- Start time and table loads can be reduced even further when using IBM FlashSystem Storage.

FLEXIBILITY

3 FAST

Accelerate insights with well-balanced system architecture for in-memory data processing.

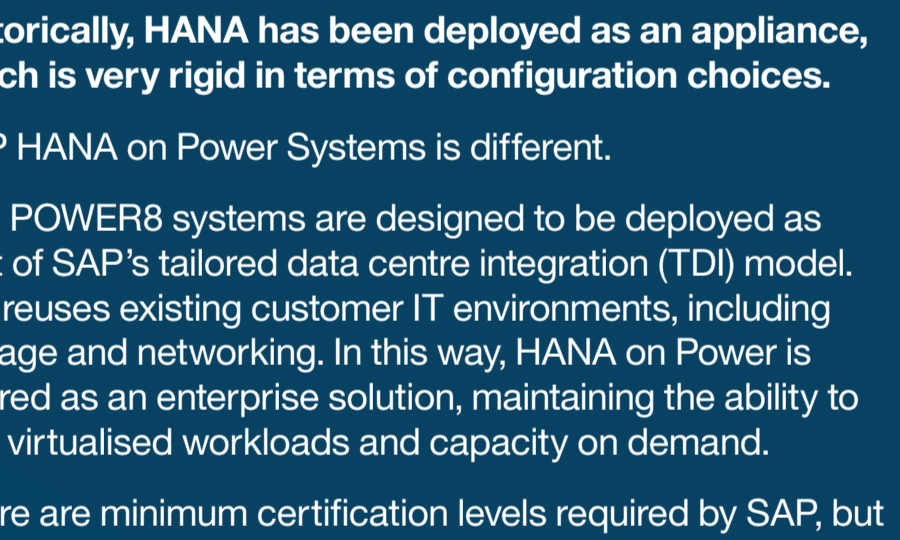
- ✓ Massive multithreading
- ✓ Fastest processors
- ✓ High-bandwidth memory

POWER8 offers 8 threads per core, which is 2x more threads than previous POWER7® servers and 4x more threads than Intel offerings, enhancing the system’s ability to concurrently execute multiple sets of instructions during the same CPU clock cycle.

With significantly more memory capacity per socket than competitor platforms, IBM POWER8 has been designed for big data and analytics workloads.

This additional memory capacity and enhancements to page cache limits by SUSE make IBM Power Systems the superior platform for unlocking the full potential of an in-memory database like SAP HANA.

- Up to 1536 threads per system, for swift execution of analytics algorithms
- Up to 224MB cache per socket to ensure continuous data for fast responses
- Up to 320GB per second of sustained memory bandwidth, providing a constant stream of data to allow all execution threads to proceed at peak efficiency
- Based on the SAP BW-EML benchmark, IBM POWER8 E870 set a new world record for performance¹



PERFORMANCE

DEPLOYMENT – ANOTHER MAJOR POINT OF DIFFERENCE

HANA has been deployed as an appliance, which is very rigid in terms of configuration choices.

SAP HANA on Power Systems is different.

IBM POWER8 systems are designed to be deployed as part of SAP’s tailored data centre integration (TDI) model. TDI reuses existing customer IT environments, including storage and networking. In this way, HANA on Power is offered as an enterprise solution, maintaining the ability to add virtualised workloads and capacity on demand.

There are minimum certification levels required by SAP, but users can architect and implement systems matched to their infrastructures. It can be deployed with a flexible choice of IBM POWER8 servers, combined with various storage options.

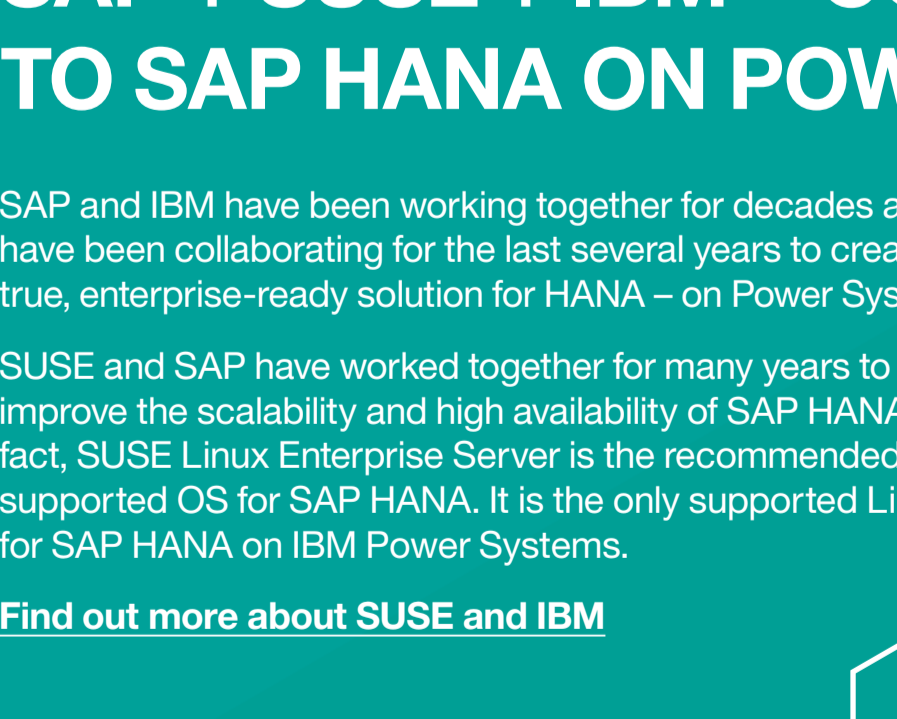
IBM Power Systems can be scaled in a way to suit your organisation, either by scaling up (adding capacity to a single piece of premium hardware) or scaling out (clustering additional hardware together to increase capacity).



“SAP HANA delivers blisteringly fast query results and supports scenarios, including real time analytics.”

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SCALE-UP



DEPLOY THE WAY YOU WANT TO DEPLOY.

Note: SAP Business Suite and S/4HANA requires Scale Up systems. These systems need to be Enterprise ready.

SAP + SUSE + IBM = COMMITTED TO SAP HANA ON POWER

SAP and IBM have been working together for decades and have been collaborating for the last several years to create a true, enterprise-ready solution for HANA – on Power Systems.

SUSE and SAP have worked together for many years to improve the scalability and high availability of SAP HANA. In fact, SUSE Linux Enterprise Server is the recommended and supported OS for SAP HANA. It is the only supported Linux for SAP HANA on IBM Power Systems.

[Find out more about SUSE and IBM](#)

“SAP has made a significant investment in the development of IBM Power Systems which gives us skin in the game because we believe in the technology.”

Kyle Garman, SVP & Managing Director, Global Partnerships, SAP

CONCLUSION

With the flexibility to deploy the way you want to deploy, resiliency to keep your SAP HANA workloads up and running, and unmatched performance, no other hardware platform is as well suited for SAP HANA workloads as IBM Power and SUSE Linux.

“It even surpassed our expectations and easily met the challenging SAP performance requirements for customised SAP HANA solutions.”

Hans Gootjes, Head of architecture & design, CTAC

TO FIND OUT MORE:

[Read the CTAC Case Study](#)

