

Lenovo Solution for SAP HANA

Innovative solutions for the digital enterprise



Lenovo System x3950 X6

HIGHLIGHTS

- Enable your digital enterprise
- Scale with mission critical infrastructure
- Lower TCO with a common server platform to scale your landscape
- Speed deployment and simplify on-going management with Lenovo Services

Enabling the digital enterprise and developing business analytic solutions are the key to understanding challenges and responding to them proactively. To develop successful strategies in today's challenging environment, you need more access to critical enterprise insights than ever before. That fact is validated by a 2013 global survey which revealed analytics, virtualization and enterprise resource planning (ERP) are three of the top 10 CIO technology priorities—with analytics and business intelligence leading the way.¹ In addition, Forrester estimates that 70% of data in the enterprise goes unused.²

And because data volumes are growing exponentially, your technology solutions must easily scale performance, manage huge volumes efficiently and operate reliably. At the same time, your solutions must enable greater application performance. These are complex demands. But breakthrough technologies can help you meet all these difficult demands now, while still accommodating for future growth. Powered by mission critical servers and Intel® Xeon® E7 v4 processors, the Lenovo Solution for SAP HANA provides outstanding capability for SAP® HANA® to drive enterprise-critical insights in real time.

Integrating hardware, software and memory advancements, Lenovo System x3850 X6 and x3950 X6 mission critical servers are designed to be agile, scalable, and more resilient. This can help your SAP HANA applications operate more efficiently and help improve your bottom line.

“The combination of the in-memory performance of SAP HANA and the capacity of the Lenovo Solution for SAP HANA allows us to perform complex ‘what if’ analyses in less than 15 minutes instead of the hours previously required.”

*—Patrick Adams,
Head of IT Services & Infrastructure,
Hapimag AG*

Simple, agile system design

To compete in today's dynamic markets, you require a deep understanding of your operational processes, personnel resources, company financials, corporate services and more. As the volume of information expands dramatically, so does the opportunity to gain valuable business insights and to predict challenges before they arrive. Yet meeting continually growing needs requires greater SAP HANA application performance than ever.

The Lenovo Solution for SAP HANA helps you make faster more informed decisions, even with escalating data loads. The reason is that the solution is designed to maximize your system performance to provide a smarter, more efficient approach to resource management. This results in excellent SAP HANA application value.

Running on fast and powerful new System x3850 X6 or x3950 X6 mission critical servers, SAP HANA software can play a critical role in providing the business insights you need from your SAP NetWeaver Business Warehouse (BW) and SAP S/4HANA® data.

The new mission critical servers are designed to provide faster performance and support for more memory. Using self-contained compute books and Intel Xeon E7 product family processors, the Lenovo Solution for SAP HANA is purpose-built to support large-scale SAP HANA deployments by incorporating:

- Up to 192 cores per server for maximum CPU performance.
- Scalability up to 94 nodes.³
- Proven expansion capacity to scale out to over 100 TB SAP HANA system.⁴

Powerful System x3850 X6 and x3950 X6 mission critical servers are ideal for your most demanding SAP HANA deployments, providing superior capability and greater business value. With improved performance, expanded symmetrical multi-processing and more memory, the Lenovo Solution for SAP HANA is the most scalable solution for SAP HANA.³

SOLUTION BRIEF

Lenovo Solution for SAP HANA

Seamless scalability

Agile design, speed, and more memory are certainly crucial to maintaining your competitiveness. But the business reality is that you will definitely require more capability next year than you do now. The Lenovo Solution for SAP HANA incorporates simplified scalability that supports your big workloads now, along with a pay-as-you-grow design for larger workloads in the future.

The new mission critical servers scale from two sockets and 48 DIMMs up to eight sockets and 192 DIMMs—giving you the memory scaling needed for your largest SAP HANA implementations. In addition, they have a unique rack design which incorporates modular component books. This combination allows you to reduce your TCO by:

- Achieving higher utilization and lower acquisition costs with improved capacity and performance.
- Speeding server deployment and serviceability.
- Swapping components quickly, including compute, storage and full-length and half-length I/O books as well as fans and power supplies.

With up to 24 cores in each Intel Xeon E7 product family processor, the X6 mission critical server can provide up to 192 cores and 384 threads using Intel Hyper-Threading Technology. This allows extreme scaling within each node, which helps you to achieve the performance you need for both current and future SAP HANA workloads.

With IBM Spectrum Scale™ software, you can move beyond simply adding storage to optimizing SAP HANA data management. This allows seamless capacity expansion in order to handle the explosive growth of SAP HANA information. When Spectrum Scale is coupled with the workload-optimized x3850 X6 four socket or x3950 X6 eight socket server, you can combine multiple X6 enterprise server models to create multi-node, scale-out configurations. Multi-node, scale-out configurations enable you to achieve larger SAP HANA memory sizes for SAP NetWeaver Business Warehouse and data mart workloads by simply adding server compute nodes.

These multi-node, scale-out configurations have an architecture which will support up to 94 nodes³ using mission critical servers. With validated, modular configurations, you can get the performance you need now and expand your server infrastructure as your SAP HANA environment grows—up to a proven 100 TB SAP HANA system⁴ and beyond. These X6 server scale-out configurations have also demonstrated industry-leading performance and near linear scalability with SAP® Business Warehouse (SAP BW)-Enhanced Mixed Load (SAP BW-EML) standard application benchmark. The x3850 X6 netted a record load of 1,992,570 ad-hoc navigation steps per hour - more than ten times greater than results achieved on other vendor platforms.⁴

And the validated multi-node scale-out configurations do not require a storage area network (SAN), because Spectrum Scale has the unique capability to use the storage contained within each server node. The result is a simplified SAP HANA infrastructure that helps constrain operational costs as your system grows.

SAP creates the world's largest SAP HANA system with 100 terabytes of main memory⁴

“SAP HANA and the Lenovo Solution for SAP HANA enable much more responsive business intelligence solutions and brings added value to our customers.”

— Martin Effinger, CTO,
winnovation AG

Resilient enterprise platform

Speed and scalability are vital to your system's success. Yet unplanned or excessive system downtime can neutralize performance and agility advantages, so system availability and dependability are equally important. That is why you need a highly available solution designed to keep your system up and running and your business thriving.

The Lenovo Solution for SAP HANA offers superior reliability, availability and serviceability features. For example, mission critical technology integrates advanced core recovery capabilities to protect the system against consumed errors that could reach critical applications.

Deploying the Lenovo Solution for SAP HANA in a modular, multi-node scale-out configuration allows a high availability (HA) approach that is exclusive to Lenovo. By including an additional HA node in your configuration, you can take advantage of the Spectrum Scale replication and automatic failover capabilities using the additional stand-by node to protect against unplanned outages.

In addition, mission critical technology offers predictive failure analysis (PFA) which helps decrease system downtime. The result of built-in system protections is outstanding system resilience. These technologies are integrated into the system platform. When combined with Spectrum Scale, the Lenovo Solution for SAP HANA helps you:

- Ensure business resiliency through integrated disaster recovery capability.
- Perform maintenance and serviceability faster due to the modular server and cluster design.
- Eliminate restarts and ease serviceability by minimizing the number of system “touches.”
- Reduce downtime with self-healing architectures for CPU failures.
- Maintain high availability by eliminating production outages and providing disruption-free maintenance and capacity upgrades.

The Lenovo Solution for SAP HANA, also offers a choice of operating system support allowing you to choose the operating system that best fits your datacenter requirements. You can choose SUSE Linux Enterprise Server for SAP Applications or Red Hat Enterprise Linux for SAP HANA, and the appropriate subscription and support. In addition, you can choose the Spectrum Scale software license that matches your configuration requirements along with the appropriate software maintenance and support needed to enhance the availability and resiliency required for large production environments. Single node configurations use the Spectrum Scale Single Server license or the XFS file system included with the Linux operating system. Scale-out cluster configurations use the Spectrum Scale Server and File Placement Optimizer licenses and enable seamless scaling up to 94 nodes.

SOLUTION BRIEF

Lenovo Solution for SAP HANA

Comprehensive solution support

To speed deployment and simplify management of your SAP HANA appliance, we offer comprehensive system support services. You can ensure optimal system performance when you take advantage of Lenovo Services offerings such as implementation services which include:

- Pre-planning, on-site implementation and configuration services to successfully install and configure your SAP HANA solution.
- Accelerated deployment through proven methods that speed installation.
- Hands-on skills transfer and detailed post-installation training and documentation for ongoing system administration.

In addition, Lenovo Mission Critical Services for the workload optimized solution for SAP HANA provides remote Managed Services.⁶ This hardware and software support service offers end-to-end remote technical assistance designed to improve availability and reduce product downtime, including:

- Integrated solution support.
- Continual monitoring of key SAP HANA solution components that include maintenance and updates to hardware, operating system software and Spectrum Scale. Simplified support processes, with expert consultants assisting with troubleshooting and problem-determination for SAP HANA and Lenovo System supported software and hardware.
- Assistance to help improve availability and reduce high-severity problem resolution time.
- Proactive IT planning and preventative support advice and services.
- Improved staff efficiency through support protocols and critical-problem management.

Agile. Scalable. Resilient.

It is no secret your business depends on technology. Therefore, your success depends on how well your mission-critical technology performs. The Lenovo Solution for SAP HANA is based on exclusive underlying System architecture and Spectrum Scale which supply you with the seamless, scalable and dependable performance you need for the bottom line business results you demand.

With extreme scalability, integrated high availability and disaster recovery and a suite of available support services, this solution helps add value and provide high performance to your SAP HANA environments. Featuring mission critical servers, the Lenovo Solution for SAP HANA is simpler to deploy, provides seamless upgrade capability and can scale to support the largest data requirements. And SAP HANA takes advantage of that hardware to reliably provide enterprise-critical insights from your current data volumes, as well as the ability to extract those insights as information volumes continue to explode.

“Running SAP HANA on Lenovo Systems gives us a strong competitive edge in both domestic and foreign markets.

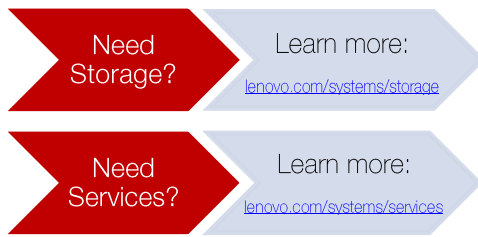
*— David Bevc,
Head of Cloud Services,
Unistar PRO*



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SOLUTION BRIEF

Lenovo Solution for SAP HANA



Why Lenovo

Lenovo is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. Lenovo also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

For More Information

To learn more about the Lenovo Solution for SAP HANA, contact your Lenovo Business Partner or visit:

lenovo.com/sap/hana

1 Gartner. Gartner Executive Program Survey of More Than 2,000 CIOs Shows Digital Technologies Are Top Priorities in 2013. January 16, 2013. <http://www.gartner.com/newsroom/id/2304615>

2 Forrester Consulting, Ultra-Fast Data Access Is The Key To Unleashing Full Big Data Potential, January 2016 <http://a248.g.akamai.net/n/248/420835/2bbc8f05759a4596bfa5e05402901629c5ee0569e34c6715058800de cbe84d61/sapasset.download.akamai.com/420835/sapcom/docs/2016/03/9ea84ab0-647c-0010-82c7-eda71af511fa.pdf>

3 Certified SAP HANA® Hardware Directory <http://global.sap.com/community/ebook/2014-09-02-hana-hardware/enEN/appliances.html#categories=Lenovo>

4 http://www.ibm.com/solutions/sap/us/en/landing/100tb_hana.html

5 http://public.dhe.ibm.com/eserver/benchmarks/news/newsblurb_x3850X6_sapbweml_20150318.pdf

Performance results of the Lenovo System x3850 X6 on the SAP BW-EML standard application benchmark as of March 16, 2015. This benchmark fully complies with the SAP Benchmark Council regulations and has been audited and certified by SAP SE (certification number 2015007).

Performance results of the Lenovo System x3850 X6 on the SAP BW-EML standard application benchmark as of May 5, 2015. This benchmark fully complies with the SAP Benchmark Council regulations and has been audited and certified by SAP SE. Details can be obtained from Lenovo and SAP. For the latest SAP benchmark results, visit: <http://www.sap.com/benchmark>.

Details can be obtained from Lenovo and SAP. For the latest SAP benchmark results, visit: <http://www-03.ibm.com/systems/x/resources/benchmarks/results/index.html>

6 Contact your Lenovo or Lenovo Business Partner sales representative for availability in your region



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