Lenovo Solution for SAP HANA Optimized with Red Hat Enterprise Linux

Accelerate your SAP S/4 HANA journey with superior, mission-critical reliability, availability, and scalability

Innovative solutions for the digital enterprise

The SAP® landscape is critical to your business. It's rapidly changing. You might not have designed for flexibility. You have a lack of resources. You need more people or simply need to do more with less. You need a proactive assessment of risk across your SAP environment. You can't afford to go down. There's disruption, or migration is a big challenge, disruption potentially during migration or change. There's a changing landscape around your SAP environment generating the need for you to change things within your SAP environment.

SAP S/4HANA®, the next generation of SAP Business Suite, opens up a tremendous business opportunity for the digital enterprise to interconnect all aspects of the value chain and anticipate business outcomes in real time. Enterprises across industries can lead the digital transformation by completely re-imagining business models, business processes, and work.

Enabling the digital enterprise and developing business analytic solutions are 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 2017 Gartner CIO Agenda survey which revealed analytics and enterprise resource planning (ERP) are top CIO priorities.[1] In addition, Forrester estimates that 70% of data in the enterprise goes unused.[2]

Powered by mission critical servers and next generation Intel® Xeon® processors, the Lenovo Solution for SAP HANA optimized by Red Hat® Enterprise Linux® for SAP Solutions provides outstanding capability for SAP HANA to drive enterprise-critical insights in real time. Designed to be agile, scalable, and more resilient, the combination helps your SAP HANA based applications operate more efficiently to improve your data foundation and help lower total cost of ownership.

SIMPLE, SEAMLESS AND SCALABLE ARCHITECTURE

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.

Use the whole platform: Run mixed workloads

For many SAP customers, the transition to running SAP S/4HANA requires conversions from running SAP applications on a given database platform to running on SAP HANA. Flexibility to make the most of your resources includes the ability to run production SAP HANA workloads side-by-side with non-production as well as non-SAP HANA workloads.

With Lenovo and Red Hat Enterprise Linux for SAP Solutions, customers can have a consistent experience and platform to support these transitions and migrate to SAP S/4HANA at their own pace. The combination helps you make faster, more informed decisions, even with escalating data loads.

Utilizing the fast and powerful ThinkSystem SR950 mission-critical servers, SAP HANA software can play a critical role in providing the business insights you need from your SAP Business Warehouse, SAP ERP, SAP S/4HANA and other SAP application data.

The new mission-critical servers are designed to provide faster performance and support for more memory. Using the next generation Intel® Xeon® processors, the Lenovo Solution for SAP HANA is purpose-built to support large-scale SAP HANA deployments.

Red Hat Enterprise Linux for SAP Solutions supports running these workloads, with a single operating system. It provides a consistent foundation for SAP customers as they move from SAP business applications to SAP S/4HANA. Red Hat Enterprise Linux for SAP Solutions also supports running non-SAP workloads.

Support for mixed workloads empowers the ultimate in flexibility, enabling SAP customers to run workloads that are memory-intensive alongside workloads that are I/O intensive, all on a single platform. Resources can be granularly allocated and reallocated across workloads to support short- and long-term changes in demand.

The ThinkSystem SR950 is a 4U rack server capable of supporting up to 8 processors. It features a modular system with all components accessible via the front or rear of the server helping to simplify server management and service. The SR950 supports up to 12 NVMe drive bays for increase storage at lower latency and up to 24 hard disk or solid state disk drive bays for increased storage capacity. Support for 128GB 3DS RDIMMs enables up to 6TB of memory in a four socket configuration and 12TB of memory in an eight socket configuration.

Used by SAP for next-generation SAP HANA development, the powerful ThinkSystem SR950 mission-critical servers are ideal for your most demanding SAP HANA deployments, providing superior capability and greater business value.

ThinkSystem

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 and Red Hat solution for SAP HANA allows you to reduce your TCO by:

•Achieving higher utilization and lower acquisition costs with improved capacity and performance.

•Delivering more VALUE while simplifying & enhancing SAP landscapes

•Speeding server deployment and serviceability.

•Swapping components quickly, including compute, storage and I/O as well as fans and power supplies.

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 data.

When Spectrum Scale is coupled with the workload-optimized ThinkSystem SR950 server, you can combine multiple server models to create multi-node, scale-out configurations. Multi-node, scale-out configurations enable you to achieve larger SAP HANA memory sizes by simply adding server compute nodes.

These multi-node, scale-out configurations support up to 94 nodes for SAP Business Warehouse and data mart workloads as well as up to four nodes for SAP S/4HANA workloads.

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.

Red Hat Enterprise Linux for SAP Solutions includes:

•Technical components to support SAP HANA, SAP S/4HANA, and business apps workloads.

•High availability solutions for SAP HANA, SAP S/4HANA, and SAP business apps offer a complete solution for the SAP landscape. It enhances native SAP HANA system replication and failover technology to automate the failover process, ensuring uptime for critical SAP applications.

•Smart Management Add-On for Red Hat Satellite provides life-cycle management that allows you to provision, patch, configure, and fully control your Red Hat Enterprise Linux development, test, and production systems. Red Hat Satellite ensures that security patches are up-to-date and provides an audit trail so that customers can report on the historical state of their systems at any point.

•Update Services for SAP Solutions, a four-year Extended Update Support service which provides backports of critical-impact security updates and urgent-priority bug fixes for minor releases.

•Red Hat Insights helps IT organizations proactively detect problems with their SAP software deployments and optimize the operating environment to support their business transactions and big data initiatives. Red Hat Insights identifies issues and offers automated resolutions. Red Hat Insights, combined with Red Hat Satellite, offers additional management for SAP environments.

The result with Lenovo and Red Hat Enterprise Linux for SAP Solutions is choice and simplified infrastructure for your SAP HANA applications that helps constrain operational costs as your data grows.

> *"The Lenovo solution optimized with Red Hat Enterprise Linux gave us the performance and scalability we needed, backed by the highest levels of SAP HANA expertise that we saw in the market. We would make the same choice again, today, because we've achieved everything we wanted in terms of flexibility, scalability, reliability, and performance." Michael Nevlida Senior Director, Global IT Infrastructure & Support Services Callaway Golf*

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, combined with Red Hat Enterprise Linux for SAP Solutions, offers superior reliability, availability and serviceability features. Consistently ranked #1 in reliability by ITIC[3], Lenovo servers offer capabilities to protect the system against consumed errors that could reach critical applications. Red Hat Enterprise Linux for SAP Solutions has built-in resiliency to complement these hardware features.

SAP applications are business-critical, and downtime is unacceptable. Deploying the Lenovo Solution for SAP HANA with Red Hat Enterprise Linux for SAP Solutions in a modular, multi-node scale-out configuration allows a HA approach.

Including an additional HA node in your configuration enables Spectrum Scale replication and automatic failover capabilities using the additional stand-by node to protect against unplanned outages.

An ideal environment

- Ensure business resiliency through integrated high availability
- Predict and quickly identify issues to decrease system downtime
- Memory redundancies for a seamless application experience
- Eliminate restarts by minimizing the number of system "touches."
- Reduce downtime with self-healing architectures
- Unlock the value in enterprise data
- Accelerate innovation
- Achieve your KPIs
- Save costs

Comprehensive solution services and support

To speed deployment and simplify management of your SAP HANA system, Lenovo and Red Hat offer comprehensive solution services and support which include:

- Pre-planning, on-site installation and configuration
- Ongoing maintenance and system updates
- Hands-on skills transfer and detailed post-installation training and documentation

Agile. Scalable. Reliable.

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 optimized with Red Hat Enterprise Linux for SAP Solutions provides the seamless, scalable and dependable performance needed to extract strategic insights from exploding information volumes helping to deliver the results you demand.

In addition, Lenovo can provide remote Managed Services.[4] This offering includes:

- Integrated solution support
- Ongoing maintenance and updates to hardware, operating system software and Spectrum Scale
- Continuous monitoring of key SAP HANA solution components
- Simplified support processes, with expert consultants assisting with troubleshooting and problem determination
- Assistance to help improve availability and reduce problem resolution time
- Proactive IT planning and preventative support advice and services

Lenovo ThinkSystem SR950
Mission Critical Server

Why Lenovo

Lenovo is a leading provider of x86 servers for the data center. Featuring rack, tower, blade, dense and converged systems, the Lenovo server portfolio provides excellent performance, reliability and security. Lenovo also offers a full range of networking, storage, software, solutions, and comprehensive services supporting business needs throughout the IT lifecycle. With options for planning, deployment, and support, Lenovo offers expertise and services needed to deliver better service-level agreements and generate greater end-user satisfaction.

Why Red Hat

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage and virtualization technologies. Red Hat offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprise, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

For More Information

To learn more about the Lenovo Solution for SAP HANA, contact your Lenovo Business Partner or visit:
www.lenovo.com/sap/hana

To learn more about Red Hat Enterprise Linux for SAP Solutions and see how it can help optimize your SAP landscape, contact your Red Hat representative or visit:
www.redhat.com/en/sap

1Gartner. Gartner Survey of More Than 2,500 CIOs Charts the Rise of the Digital Ecosystem. October 17, 2016
http://www.gartner.com/newsroom/id/3481117
2Forrester Consulting, Ultra-Fast Data Access Is The Key To Unleashing Full Big Data Potential, January 2016

3ITIC, ITIC 2016 - 2017Global Server Hardware, Server OS Reliability Report
http://www.lenovo.com/images/products/system-x/pdfs/white-papers/itic_reliability_2H_2016_wp.pdf
4 Contact your Lenovo or Lenovo Business Partner sales representative for availability in your region