Virtualization Solutions for SAP HANA

SUSE® Linux Enterprise is the leading platform for SAP solutions on Linux and the recommended and supported operating system (OS) of choice for SAP HANA. SAP HANA now runs in production on vSphere 5.5, letting you combine the power of the SAP HANA in-memory platform with VMware vSphere and SUSE Linux Enterprise Server for SAP to achieve faster time-to-value, better service levels and lower total cost of ownership (TCO) for your production environments.

SUSE and VMware Solutions for SAP HANA at a glance:

+ VMware and SUSE offer the best solution for virtualizing SAP
+ SUSE Linux Enterprise Server for SAP is recommended by VMware for SAP HANA deployments on vSphere
+ Optimized for fast SAP deployment and performance
+ Integrated high availability
+ Integrated priority support
+ vSphere 5.5 production-ready for SAP HANA

Products:

- SUSE Linux Enterprise Server for SAP Applications

Virtualizing SAP HANA Lowers TCO

SAP HANA is an in-memory computing platform that has completely transformed the relational database industry. It combines database, application processing and integration services on a single platform. SAP HANA is typically deployed on a complete, pre-configured appliance, which is provided by a certified SAP HANA hardware partner. However, the SAP HANA Tailored Datacenter Integration (TDI) option allows customers to leverage existing assets for some elements of the SAP HANA environment. The SAP TDI program provides greater flexibility for deploying SAP HANA in a virtual environment and reduces both capital expenditures (CapEx) and operating expenses (OpEx) by allowing the reuse of existing hardware, as well as leveraging current operational management processes.

Not All Data Is the Same

SAP Multi-Temperature Data Management techniques like Dynamic Tiering and Near Line Storage allow you to significantly reduce the size and cost associated with your SAP HANA in-memory footprint. SAP HANA Dynamic Tiering allows customers to place up to 40 percent of data (and in the future up to 70 percent) on standard x86 hardware. Now, SAP HANA multi-terabyte size databases can be easily virtualized with vSphere 5.5 using these memory management techniques that SAP has introduced to optimize and reduce HANA’s in-memory footprint.

Dynamic Tiering is an add-on product to SAP HANA that lets you manage data of different temperatures: hot data (always in memory), cold data (disk-based data store) and warm data (not always in memory), which has lower latency requirements than hot data. SAP HANA Dynamic Tiering
utilizes an extended table concept that allows you to store warm data in extended tables that are managed by SAP HANA. Data that is initially frequently accessed and then only used occasionally once it reaches a certain age is classified as cold and can be removed from the SAP HANA data persistence and stored in an accessible archive. The solution offered by SAP is Near-Line Storage (NLS) with SAP IQ.

Production SAP HANA on vSphere 5.5

With Dynamic Tiering, SAP HANA is not confined by the size of available memory since the SAP HANA warm data can be stored on disk in a columnar format and accessed transparently by applications. Thus, the 1TB virtual machine maximum in vSphere 5.5 is an artificial barrier, and SAP HANA multi-terabyte size databases can be easily virtualized with vSphere 5.5 using Dynamic Tiering, Near-Line Storage and other memory management techniques SAP has introduced to the SAP HANA platform to optimize and reduce HANA’s in-memory footprint.

By combining the power of the SAP HANA in-memory database platform with VMware vSphere and SUSE Linux Enterprise Server for SAP Applications, organizations can achieve faster time-to-value, better service levels and lower TCO for their SAP HANA production environments with full SAP, VMware and SUSE support. Customers can maximize the performance and agility of SAP HANA in the most flexible, cost-effective way while optimizing their data center operations with advanced features from VMware, such as vSphere vMotion, vSphere Distributed Resource Scheduler (DRS), vSphere High Availability (HA) and Disaster Recovery (DR).

24x7 Priority Support for SAP

Extended Service Pack Support
18 Month Grace Period

- Page Cache Management
- Antivirus ClamSAP
- SAP HANA Security
- Simplified Operations Management

High Availability
SAP NetWeaver & SAP HANA

SAP HANA HA Resource Agent
Installation Wizard Faster Installation

Reliable, Scalable and Secure Operating System
SUSE Linux Enterprise Server

Figure 1. SUSE Linux Enterprise Server for SAP Applications

SUSE Linux Enterprise Best Choice for SAP

SUSE Linux Enterprise is the leading platform for SAP solutions on Linux, the number one platform for SAP HANA and the Linux platform recommended by VMware in their guide “Best Practices and Recommendations for Scale-up Deployments of SAP HANA on VMware vSphere.”* SUSE Linux Enterprise Server for SAP Applications includes a number SAP-optimization features:

- The page cache limit feature limits the amount of page-cache used and optimizes the Linux paging behavior. This feature is crucial for SAP applications to improve performance.
- Antivirus toolkit integration with the SAP Virus Scan Interface improves cross-platform threat detection.
- End-to-end installation framework enables an integrated, unattended and automated installation workflow for validated SAP solutions.
- SUSE Linux Enterprise High Availability Extension provides an integrated clustering solution for physical and virtual Linux deployments, enabling the implementation of highly available Linux clusters and eliminating single points of failure.

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- **Available live kernel patching** allows you to update security patches without rebooting machines and waiting for the next service window, reducing the downtime of huge in-memory databases like SAP HANA.
- **Full system rollback** gives SAP customers better resiliency by letting them take snapshots of the system, including the kernel files, and rolling back as needed.
- **Resource agents** enhance the SAP HANA system replications setup by automating takeover and reducing the length and the number of interruptions for both your business-critical SAP systems and your SAP HANA databases.
- **Integrated priority support and maintenance** through SAP Solution Manager from both SUSE and SAP.
- **Extended service pack overlap support** gives you service pack support for a full 18 months, 12 months more than the standard 6-month grace period.

**High Availability with Automated Failover**

Since 2011, SUSE and SAP have constantly worked on improving the scalability and high availability of SAP HANA so that customers can grow their deployments to include multiple nodes and true big data environments. To ensure high availability and disaster recovery, SUSE supports replication of your SAP HANA system within the same data center or across two data centers by including components of SUSE Linux Enterprise High Availability Extension with SUSE Linux Enterprise Server for SAP Applications. Since system failure can occur at any time of the day, night or weekend, SUSE automates the system replication process to simplify the failover procedure and minimize the time systems are down.

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**Performance Optimized**

![Figure 2](#)
Partnership for Enterprise Computing

SUSE and VMware have teamed to provide best-in-class Linux virtualization solutions—on-premise or in private, hybrid and public clouds—that allow you to leverage your investment in VMware tools and solutions to manage the industry’s most interoperable enterprise Linux. Alliance partners since 2004, SUSE and VMware can provide joint solutions for your software-defined data center.

Contact your local SUSE Solutions Provider, or call SUSE at:

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