Dell and SUSE: The Fastest Route to SAP HANA Value

To speed up business decision making and embrace SAP S/4HANA, you need to put SAP HANA to work for you. And getting the most from SAP HANA requires quick-to-deploy, high-performance infrastructure. That's what you get with SAP HANA on Dell PowerEdge servers and SUSE® Linux Enterprise Server for SAP Applications.

The Competition Won't Wait

The speed of business today is the reason more and more organizations are turning to SAP HANA. They know that their competition isn't sitting still, and that moving to SAP's in-memory database could help speed business decisions across the organization.

And with SAP's move to SAP S/4HANA, organizations that rely on SAP applications also realize that the time to get started with SAP HANA is now. But how to move to SAP HANA the right way, and do it quickly? Dell and SUSE can help.

The Fast Lane to SAP HANA

Dell and SUSE offer a high-performance, validated SAP HANA appliance on Dell PowerEdge hardware and SUSE Linux Enterprise Server for SAP Applications. The solution can help you speed setup and time to value while giving SAP HANA the solid foundation it needs to support your business.

The appliance solution gives you high performance and enterprise-class availability, and allows you to virtualize your SAP HANA deployment using VMware vSphere, the only hypervisor certified by SAP for SAP HANA.

It can grow to match any scale scenario. And for organizations that still use Microsoft in their data center, SUSE offers enterprise Linux that plays well with Microsoft and can ease management in mixed data centers.

Close Partnerships Power Better Results

SUSE and Dell work together frequently to ensure the success of organizations using SAP applications around the world. In fact,

SUSE is Dell's preferred SAP partner, with 95 percent of Dell SAP installations running SUSE Linux Enterprise Server.

SUSE Linux Enterprise Server is tested and validated on all of Dell's enterprise platforms, including all Dell PowerEdge servers, Dell OpenManage, Dell storage and Dell networking.

SUSE also maintains a close relationship with SAP, one that includes joint testing and development that started at the SAP LinuxLab in Germany in 1999. Ninety percent of all SAP HANA installations run on SUSE, and SUSE was recently named an SAP HANA Innovation Award Winner 2017[1]. Plus, 28 of the other award winners use SUSE as their operating system of choice.[2] SAP itself uses SUSE Linux Enterprise Server as well, for both its production and testing environments.

Dell PowerEdge Servers

Dell offers a complete range of SAP HANA appliances based on Dell PowerEdge R940, R740, R740xd and R640 servers. The Dell PowerEdge R940 server platform is the latest model: a high-performance four-socket, three-unit rack server designed for reliability and scalability for mission-critical applications. The SAP HANA solution comes in sizes that are prespecified and certified by SAP, and engineered by Dell, to meet your needs.

SUSE was recently named an SAP HANA Innovation Award Winner 2017. Plus, 28 of the other award winners use SUSE as their operating system of choice.

---

1   www.suse.com/communities/blog/suse-receives-sap-hana-innovation-award-2017-industry-disruptor/
2   www.sap.com/documents/2017/10/9ab41894-dc7c-0010-82c7-eda71af511fa.html

---

Dell designed the Dell PowerEdge R940 with the ability to scale to accommodate mixed workloads while maximizing the performance of your applications and managing server lifecycles. The latest generation of Dell PowerEdge servers are preconfigured to run SAP HANA. In fact, Dell PowerEdge servers are the only SAP HANA partner platforms that can accommodate any size of data center and provide efficient growth and scalability without rip-and-replace costs.

Dell technologies built into the servers, like the Dell OpenManage system management portfolio and the integrated Dell Remote Access Controller with Lifecycle Controller, automate and simplify many lifecycle management tasks.

SAP HANA also benefits from significant performance improvements for standard enhanced mixed loads on the PowerEdge R940 as compared to previous-generation Dell PowerEdge servers.

The PowerEdge R940 supports 50 percent more Non-Volatile Memory Express (NVMe) drives than the R930, up to 48 dual inline memory modules (DIMMs, 12 of which can be NVDIMMs) and up to 6 TB of memory. It can make input/output bottlenecks a thing of the past and keep processor utilization at its peak. Proactive diagnostics and automated remediation can increase productivity up to 90 percent.[3]

Dell offers further documentation on SAP systems, such as reference architectures, on its blueprints page here. You can see a full list of Dell servers certified for SAP workloads here.

SUSE Linux Enterprise Server for SAP Applications

More than 90 percent of SAP HANA customers use SUSE Linux Enterprise Server for its reliability, resilience, performance and ease of use.

Open, flexible and innovative: SUSE is the trusted and preferred open source flexible platform for SAP customers who want to unlock data intelligence and drive digital innovation.

---

3   "Resolving Server Problems with Dell ProSupport Plus and SupportAssist," Principled Technologies lab testing report, September 2015.

Reliability and Resilience

SUSE Linux Enterprise Server for SAP Applications comes with a high-availability extension that allows you to cluster physical servers, virtual guests or any combination of the two. Its easy-to-use graphical user interface make cluster configuration and management simple, and offers a cluster simulator, which lets you test and validate configuration changes before implementing them.

SAP HANA has a business continuity architecture that replicates the in-memory data so administrators can initiate failover to a backup in case of a primary system failure. SUSE Linux Enterprise Server for SAP Applications enhances this capability by providing resource agents that automate that failover action. This means failover happens without needing an action from the administrator, so systems stay up and running even when your IT team is focusing on other projects.

SUSE developed the two resource agents involved and currently supports failover automation for all common scale-up and scale-out SAP HANA scenarios. You can find best practices for mission-critical SAP applications, including setup guides for system replication, here.

SUSE Linux Enterprise Server for SAP Applications includes an SAP HANA system-specific firewall. This can help prevent unauthorized access to your SAP HANA system and the valuable data that resides in it.

"Our SAP systems are now faster and we have more time in the IT team to implement new functionality to make the business run even more smoothly. And thanks to our move to standard hardware and the SUSE Linux Enterprise platform, we have also achieved very significant cost savings."

JAN PATERA
SAP BC Administrator
Prvni novinova spolecnost a.s.

To aid encryption key management, SUSE provides a key server for the encryption built into the Linux operating system. Normally, during a mount or reboot, the system would need to decrypt the data and would thus require an administrator to enter the key. SUSE removes this manual task by allowing the system to contact the key server itself.

SUSE also offers a unique guide to help you secure SUSE Linux Enterprise Server for SAP Applications for running SAP HANA: "Operating System Security Hardening Guide for SAP HANA."

Performance and Ease of Use

The SUSE-exclusive page cache management feature helps protect system performance. Normally, the Linux kernel will swap out rarely accessed memory pages as cache to speed up file system operations. That can take memory SAP applications need to run optimally. With SUSE, the system administrator can limit the amount of page cache that the kernel uses when there is competition between application memory and page cache.

The operating system's Installation Wizard provides an end-

SUSE Linux Enterprise Server is the recommended and supported operating system for SAP HANA and is currently running in more than 7,000 SAP HANA installations, including SAP's own.

---

to-end installation framework that enables an integrated, unattended and automated installation workflow for validated SAP solutions. The installation interface gives administrators a guided workflow including configuration and tuning parameters for SAP HANA, SAP NetWeaver and more. This allows you to easily optimize your SAP systems for better performance.

For those operating in mixed Linux and Microsoft data centers, the SUSE operating system also supports Remote Desktop Protocol and Active Directory integration, so your administrators can more easily interact with and connect your Linux operating systems to the rest of your IT environment.

SUSE Linux Enterprise Server for SAP Applications comes with priority support and maintenance 24 hours a day, seven days a week. It is integrated with SAP support to help you resolve issues with the operating system and SAP applications simultaneously.

Subscriptions for SUSE Linux Enterprise Server for SAP Applications include Extended Service Pack Overlap Support, which extends the overlap between the support periods of two consecutive service packs by one year. This allows you to perform service pack migrations within 18 months instead of only six months. You have more flexibility scheduling migrations and more time to test before you perform a migration.

SUSE also offers a dedicated update channel for the SAP-specific features and components in SUSE Linux Enterprise Server for SAP Applications. This is in addition to the update channels for the base operating system and the high availability extension.

You can also virtualize your SAP HANA deployment by running SUSE Linux Enterprise Server for SAP Applications as a virtual machine using VMware vSphere, which is the only hypervisor certified by SAP for SAP HANA.

Trusted, Open and Innovative

SUSE Linux Enterprise Server for SAP Applications is SAP's in-house implementation platform. The collaboration between the two companies span decades, with embedded engineering and support teams on both sides working together seamlessly. As the leading Linux platform for HYPERLINK "https://whatis.suse.com/definition/sap-hana/" SAP HANA, HYPERLINK "https://

whatis.suse.com/definition/sap-netweaver/" SAP NetWeaver and HYPERLINK "https://whatis.suse.com/definition/sap-s4hana/" SAP S/4HANA, SUSE Linux is the most trusted name for your SAP Landscape.

As the world's largest independent open source provider, SUSE is dedicated to being Open. With the kind of flexibility that you can always expect, SUSE Linux Enterprise Server for SAP Applications always puts the customer in the driver's seat. With SUSE, it's a never lock-in, always open kind of world.

SUSE has been SAP's co-innovation partner for the duration of our collaboration. Year after year, SUSE and SUSE customers running SUSE Linux Enterprise Server for SAP Applications consistently win more SAP Innovation awards than any other provider. Run your SAP applications on SUSE, you'll be in great company.

Learn More

Find out how Dell hardware and SUSE Linux Enterprise Server for SAP Applications can be the fastest way to SAP HANA value for you at **www.suse.com/dell**.

www.suse.com