

# SAP HANA and S/4HANA on VMware vSphere for Production Environments

## Data center needs

- Flexible, responsive setup
- Timely, secure access to mission-critical data
- Increased utilization and productivity of existing setup
- Higher return on investment at lower operating costs

## Data center transformation with Virtualized SAP HANA and S/4HANA

- Transform transactional to analytic workloads
- Achieve significantly lower TCO
- Realize faster time-to-value
- Deliver better service levels

*Achieve faster time-to-value, better service levels and lower total cost of ownership for your production environments*

## The Speed, Agility and Economics Required to Meet Rapidly-Changing Business Needs

The pressure on IT to keep up with data needs has never been greater. Millions of users need access to data in real time across newer apps on desktops, mobile devices, and tablets. Business users need timely access to market insights and internal data to provide decision support – which in turn drives innovation and growth.

IT infrastructure needs to be able to handle this volume and velocity, providing a reliable, fast, cost-efficient, and secure way to manage, store, and access data. Successfully supporting this need hinges on simplifying the underlying infrastructure, and maximizing performance on existing data center operations.

The emergence of a software-defined approach to enterprise IT has allowed organizations to be increasingly flexible to meet these goals. Virtualizing production landscapes has changed the way CIOs look at overall compute today. This is because virtualization fundamentally supports the speed, agility and economics that data centers require to meet rapidly changing business demands. Extending this approach and virtualizing mission-critical environments like SAP HANA helps IT achieve lower total cost of ownership (TCO), faster time-to-value and better service levels.

## SAP HANA Enables the Real-Time Enterprise

SAP HANA and S4/HANA are game-changing technologies that break down traditional database barriers. They provide instant access to huge volumes of data as it is created, without complex layers of data management and storage getting in the way. Performing real-time analytics, transaction execution and data processing on a single in-memory database enables faster answers to complex questions. This allows the business to leverage IT as a true source of competitive advantage, while helping to re-innovate their business by combining online transaction processing and online analytical processing capabilities.

## SAP and VMware Empower Business Transformation

SAP and VMware, together, are empowering customers' transformations of their businesses with solutions that help to innovate, simplify, and accelerate their journey to a software-defined enterprise. Running SAP landscapes and data workloads on VMware virtualization software provides the simplicity, efficiency, and agility customers demand for their most mission-critical enterprise environments.

Customers can transform and virtualize their entire SAP landscapes, from transactional to analytic workloads, as well as virtualize SAP HANA production environments using VMware vSphere®, a foundational component of VMware vCloud Suite®.

## The Journey to Becoming a Software-Defined Enterprise

The journey typically begins with server virtualization, followed by using higher degrees of automation and management to extend virtualization to storage, networking and security, along with mission-critical applications and environments, like SAP HANA.

## SAP HANA on VMware vSphere

SAP and VMware, together, are delivering the power of real-time business in a highly available, efficient and cost-effective way for the most mission-critical and demanding business applications.

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- Reduce CapEx by 70%
  - Reduce OpEx by 56%

–Taneja Group research, 2014

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## Ensure out-of-the-box high availability of 99.9%

–EMC Perspective, H12853, 2014

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## Leverage SAP virtualization and automation to reduce infrastructure operating costs – Over 40 M \$ in savings over 7 years

–McKesson, Sapphire 2013

## Virtualization of Production SAP HANA on VMware vSphere

By combining the power of the SAP HANA and S/4HANA in-memory database platforms with VMware vSphere—the foundation of vCloud Suite—organizations can achieve faster time-to-value, better service levels, and lower TCO for their SAP HANA production environments with full SAP and VMware support.

VMware vSphere gives SAP HANA and S/4HANA customers the agility, efficiency, and control they are looking for, leading to more efficient use of hardware and human resources, and delivering on the promise of IT as a strategic business resource.

Customers can also maximize the performance and agility of SAP HANA and S/4HANA in the most flexible, cost-effective way, while optimizing their data center operations with advanced features such as VMware vSphere vMotion®, VMware vSphere Distributed Resource Scheduler™ (DRS), VMware vSphere High Availability (HA) and Disaster Recovery (DR).

## Increase Utilization and Productivity to Achieve Lower TCO

SAP HANA and S/4HANA on VMware vSphere delivers both hardware and workflow efficiencies that add up to real savings.

The integration of virtualized IT services with analytics-based, highly automated operations management simplifies and streamlines administration. At the same time, the ability to unify and manage SAP HANA with the rest of the virtualized data center allows IT to reduce the need for specialized staff. This delivers big gains in efficiency, lowering operating expenditures (OpEx) by up to 56 percent<sup>1</sup> and freeing up resources to be focused on innovation.

Improved utilization of existing infrastructure, along with simplified operations management, drives capital expenditure (CapEx) reduction by up to 70 percent.<sup>2</sup> Enabling scenario-based data center capacity planning further allows IT to grow the environment in a sustainable fashion, keeping long-term costs down.

## Maximize Uptime and Balance Workloads for Better Service Levels

Continually changing the business and workload demands of mission-critical apps make it challenging to meet service levels and end-user expectations alike. VMware vSphere DRS allows IT to automatically manage peak analytic workloads easily, by adjusting resource allocation levels to meet fluctuating demands.

For day-to-day operations, VMware vSphere vMotion allows IT to live-migrate SAP HANA databases across hosts in just minutes, with zero downtime and zero data loss. While live migrating, vMotion maintains the entire memory state, data, temporary tables, and statistics.

In the case of a server outage, VMware vSphere HA ensures 99.9 percent uptime<sup>3</sup> by automatically restarting virtual machines on other hosts in the cluster, without manual intervention.

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<sup>1,2</sup> Taneja Group research, 2014

<sup>3</sup> EMC IT, EMC Perspective<sup>3</sup> EMC IT, EMC Perspectives, 2/2014, H12853

## Performance Benchmarks

During a recent performance analysis conducted jointly by SAP and VMware, the majority of the test cases stayed within the defined performance indicators compared to bare metal.

## Improve Performance and Agility Leading to Faster Time-to-Value

Virtualizing SAP HANA and S/4HANA accelerates and automates provisioning, reducing deployment time to hours vs. days.<sup>4</sup>

Unified management tools allow management of SAP HANA environments using the same tools used to manage VMware-virtualized data centers. The unified management portal provides access to VMware-enabled abstraction, pooling and automation of the entire compute layer, enabling rapid application provisioning on any hardware stack and on vSphere-based private or public clouds.

The on-demand self-service portal and catalog allows designated users to easily self-provision infrastructure, platform and desktop services in minutes. At the same time, best-practice application architectures allow the building of reusable templates that can be shared across teams, organizations, and clouds. Both of these features greatly reduce time-to-market for business initiatives and new products.

## VMware and SAP – A Strategic Partnership

### Joint Solution Development

SAP and VMware have a long-standing, strategic partnership and work together to ensure customers can operate SAP HANA instances and SAP mission-critical applications in virtual environments with confidence. VMware and SAP have been co-innovating, bringing the benefits of virtualization to SAP applications and database platforms.

### Providing Flexible Deployment Choices

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 Data Center Integration (TDI) option allows customers to leverage existing assets for some elements of the SAP HANA environment.

The SAP TDI program, and the support for all SAP HANA and S/4HANA deployment options, coupled with VMware production support, provides greater flexibility for deploying SAP HANA beyond the physical appliance model. TDI reduces both CapEx and OpEx by allowing the reuse of existing hardware, as well as leveraging current operational management processes.

More information on SAP HANA TDI can be found at: [www.saphana.com/docs/DOC-4380](http://www.saphana.com/docs/DOC-4380)

## Learn More

### Speak to a Sales Rep

Call 877-4-VMWARE (outside North America, +1-650-427-5000), or visit [www.vmware.com/products](http://www.vmware.com/products) or search online for an authorized reseller.

### On the Web

Visit [www.vmware.com/go/sap-hana](http://www.vmware.com/go/sap-hana)

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**Reduce deployment time to hours vs. days**

–EMC IT internal analysis

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<sup>4</sup> EMC IT internal analysis

