



SAP REDEFINED: EMC IT VIRTUALIZES SAP HANA WITH VMWARE

SUMMARY

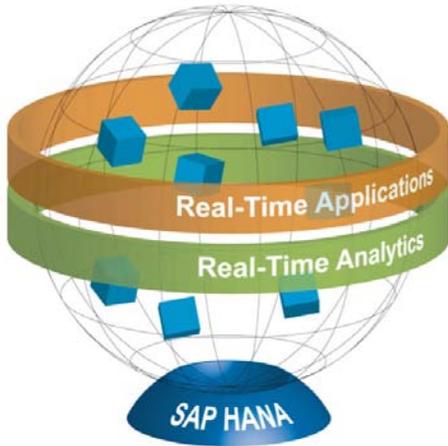
As early as 2004, EMC® IT set out on a journey of IT transformation. So far, that transformation has seen it replace an aging and highly customized ERP system to a fully virtualized SAP® ERP system in production providing agility, flexibility and operational efficiency. For more on EMC's global SAP rollout, please download the white paper, EMC Accelerates Business Operations with SAP.

In late 2012, EMC IT further transformed their SAP landscape with the adoption of SAP's in-memory high performance analytics platform, SAP HANA® with a sidecar deployment to support operational reporting. Now, EMC IT is leading the way in reaping the benefits of an already virtualized SAP landscape, and continuing the same strategy with their virtualized deployment of Business Processing and Consolidation (BPC) on SAP HANA. As SAP innovates, so too has EMC IT by leveraging the power of VMware® to support its SAP HANA rollout.

EMC IT'S SAP HANA DEPLOYMENT

- SAP HANA v1 SPS6
- SAP application: Business Planning and Consolidation
- VMware vSphere® 5.5
- Database size: 100-300GB
- Users: 800





THE DECISION: WHY VIRTUALIZE SAP HANA?

At the time of deployment, EMC IT's SAP ERP implementation was fully virtualized. With a proven SAP virtualization strategy already in place, it was logical to continue that strategy by deploying BPC on virtualized HANA.

The business acknowledged that it would be faster to run BPC on virtualized HANA instead of a traditional RDBMS platform. This proved correct; in fact EMC has enjoyed substantial competitive advantages as a result of migrating from its previous relational database management system to virtualized HANA.

THE BENEFITS OF VIRTUALIZING HANA

Efficient resource utilization, leading to Reduced costs (both in capital expenditures and operating expenses) and increased return on investment

- 400% performance gain moving from existing RDBMS – response times cut from minutes to seconds, leading to more iterations and better forecasting
- Greater flexibility and better agility, allowing faster responses to shifting market conditions
- Embedded high availability and efficient automation
- The ability to focus on innovation rather than operations

THE DEPLOYMENT PLAN

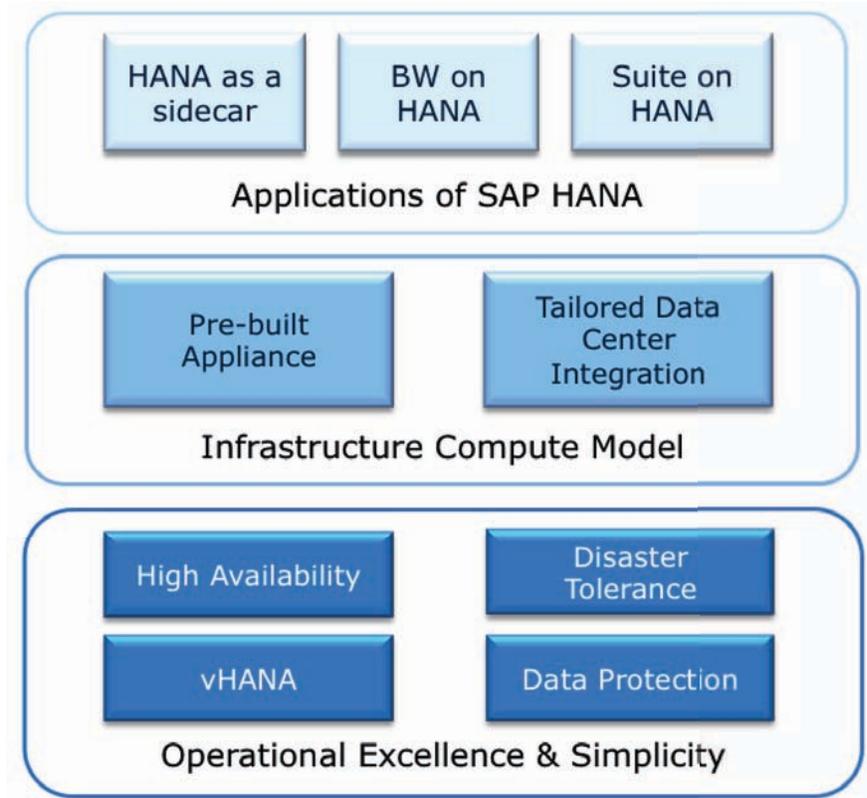
EMC IT developed a comprehensive deployment plan, with a tight execution window. The plan was to migrate its SAP BPC application from its previous Relational Database Management System (RDBMS), to virtualized HANA by the end of November 2013.

From the outset, EMC IT's goal was to give its internal customers and users an IT environment with optimized performance and response times. The team foresaw that the significant improvement in performance gained from virtualized HANA would yield more efficient business processes all round.

EXECUTING THE PLAN

In practice, EMC IT found that it was able to deploy SAP HANA, even faster and at lower cost, than expected. This was largely due to the already virtualized SAP deployment strategy leveraging the existing VCE™ Vblock™ converged infrastructure, which was SAP-certified for Tailored Data Center Integration (TDI) deployments. Additionally, virtualized HANA allowed for flexible elasticity to expand within the infrastructure not bound by the physical limitations of an appliance. Moreover, there was no performance overhead by virtualizing SAP HANA.

Despite having a long-term strategy to fully virtualize its entire SAP landscape, EMC IT still had to demonstrate the value of using the SAP HANA platform. Therefore, it started small by deploying real-time analytics capabilities on a 'sidecar' appliance, as the first step towards a larger SAP HANA deployment. By doing so, the team justified future investments in the technology and paved the way for the expansion and virtualization of SAP HANA. The focus for expansion was SAP's Business Planning and Consolidation (BPC) application, SAP's online analytical processing (OLAP) engine running on the same technology stack as SAP's more versed BW solution.



COST MANAGEMENT

Correctly estimating the initial deployment size and growth path is a common challenge in IT, and even good sizing strategies can be rough estimates. Most SAP BPC implementations run on smaller databases (from 100-300GB), and many run 'embedded' in the Business Warehouse. EMC IT, however, found that by running its SAP BPC implementation in 'standalone' mode, it could achieve significant gains in maintenance, performance and automation.

Virtualizing SAP HANA for its BPC implementation gave the team significant control over costs. It could run with only the necessary amount of memory, using existing EMC IT standard hardware, and avoid the vast over-allocation of resources associated with traditional physical SAP HANA appliances. In this case, a more simplistic single virtualized HANA node was more than sufficient.

In addition to offering lower entry costs, the smaller virtualized HANA implementations have since been used for training, proof of concepts and custom application development, with a higher return on investment in all instances.

Importantly, many features and functions are built into the virtualized infrastructure for years to come, which will keep costs down and increase flexibility and automation in EMC's IT environment. The virtualized infrastructure also gives EMC IT the freedom to expand and respond to changing business conditions without the physical limitations of an appliance.

HIGH AVAILABILITY

Implementing SAP HANA in a virtualized environment has allowed EMC IT to capitalize on many of VMware's functions – especially for high availability. EMC's general benchmark for VMware-based high availability is that it provides "three nines" high availability (99.9%) out-of-the-box. While mission critical applications may require more expensive clustering solutions, VMware provides ample availability for business supporting applications and natively ensures the availability of all non-production systems. Moreover, the VMware-based high availability solution has allowed EMC IT improve its return on investment.

PERFORMANCE AND BUSINESS OUTCOMES

EMC IT has experienced significant performance benefits from running its BPC on virtualized HANA rather than its previous virtualized RDBMS supported application. Data retrieval alone has improved by more than 400%, which in turn has improved efficiencies in running analytics.

The business justification to run virtualized HANA was based on a performance comparison to the application on the traditional RDBMS platform. Ultimately the virtualization of SAP HANA has led to business outcomes with improved levels of predictability and increased confidence in planning our business.

WHERE TO NOW?

By using storage-based replication to support Disaster Recovery (DR), the team also expects to reduce the compute footprint of these DR instances, and reduce operational costs even further. This is different from SAP's DB-level replication of transactions, which requires significant "standby" compute at an existing DR site.

As many SAP customers grapple with rationalizing an SAP HANA investment, taking a virtualization approach reduces infrastructure costs, and enables them to scale up as business conditions evolve in the coming years leveraging the true tenants of cloud computing.

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