Solution Showcase

Dell EMC PowerEdge Modernizes Compute to Maximize the Value of SAP

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Abstract: Data, the lifeblood of the modern business, offers a competitive advantage to those capable of capitalizing on its value. Among modern, data-intensive workloads, SAP often ranks among the top in both its importance to day-to-day operations and its potential to introduce new business opportunities. Maximizing the value of the data stored in SAP's database landscape with initiatives, such as real-time analytics, however, demands a secure, resilient, and powerful compute technology, such as that from Dell EMC PowerEdge, powered by Intel® Xeon® Scalable processors, to serve as the bedrock of a modern data center.

Overview

Few, if any, workloads exemplify the complexities of modern IT more than SAP. Essential to day-to-day enterprise operation, SAP is always on and mission-critical. As the business scales, SAP must scale with it. Interruptions in performance or loss of accessibility are simply inexcusable. With the recent rise in analytics, AI, and IoT workloads, the opportunity and pressure placed on SAP environments has never been greater. IT must transform to keep pace while opening the door for these new opportunities.

With the digital era of business upon us, IT and the digital services they provide play a larger role in determining business outcomes and market competitiveness. Maximizing the potential of business data, such as the insights offered by SAP, is essential to business survival. Unfortunately, the business cannot stop to allow IT to redesign the infrastructure to take full advantage of its SAP implementation. Enterprise IT organizations likely have existing highly virtualized, mission-critical SAP environments requiring daily care, often made more complex with too many information silos.

To compete, IT and the business must transform. According to ESG's research on IT spending intentions, 86% of IT decision makers agree with the statement, "If we do not embrace digital transformation, we will be a less competitive and/or effective organization."[1]

With SAP, these transformations can be a challenge, as the underlying infrastructure is often highly virtualized, supporting mixed workloads. Modern IT must offer server, networking, and storage infrastructure with the necessary resiliency and security, while delivering the performance, management, automation, agility, and scale to consolidate these complex environments. Simultaneously, IT must provide a smooth path to SAP HANA with its in-memory architecture. To

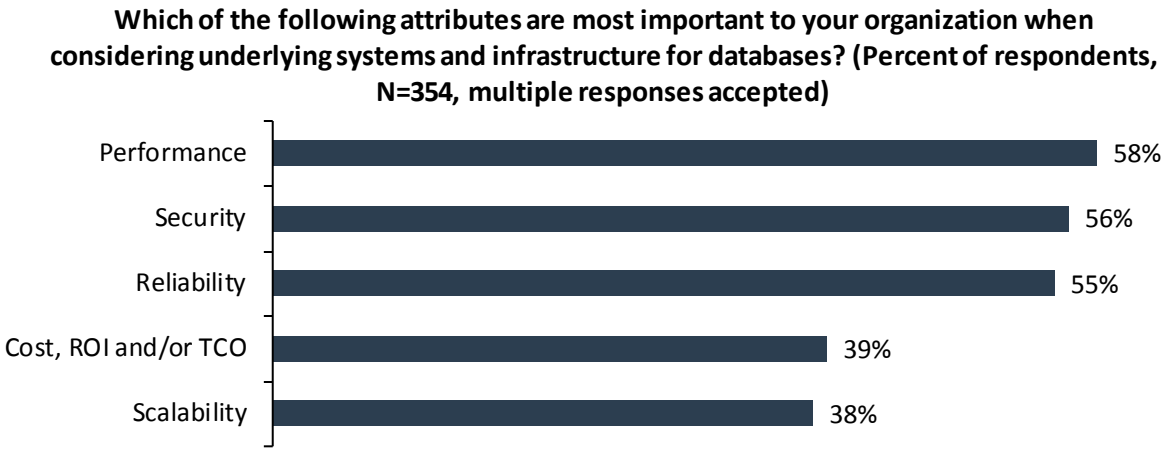
[1] Source: ESG Master Survey Results, *2018 IT Spending Intentions Survey*, December 2017.

accomplish this feat, IT needs a partner like Dell EMC. As a leader in IT infrastructure, Dell EMC and its PowerEdge Server technology offers everything necessary to lead the IT transformation for high-value workloads such as SAP.

Modernized Infrastructure Enables the Future of SAP

Three infrastructure attributes stand out when it comes to unlocking the potential of enterprise database environments, such as SAP. Performance (58%), security (56%), and reliability (55%) were the infrastructure attributes for database workloads most commonly identified as important by ESG research respondents.[2] After these three, there was a 16-point drop before getting to total cost of ownership, TCO. In other words, performance, security, and reliability outweighed cost considerations for most organizations.

Figure 1. Top Five Important Attributes for Database Infrastructure



Source: Enterprise Strategy Group

The priority given to performance, security, and reliability, above the typical budgetary considerations, such as cost, ROI, and TCO, highlights the importance of enterprise SAP infrastructure. In other words, if the infrastructure doesn't offer enough performance—if it isn't secure, or if it isn't reliable— it doesn't matter if it cost less. SAP is simply too important to the business. Understanding this dynamic, Dell EMC PowerEdge, powered by Intel® Xeon® Scalable processors, is architected to maximize these three attributes while simultaneously helping businesses control the cost of infrastructure.

The Role of Compute in Modernizing IT for SAP

Transformation is essential to modern businesses but without the right context, it can be easy to overlook the true extent of the benefits. In a detailed research study designed to understand the importance of server compute capabilities to IT modernization outcomes, ESG identified that *Modernized* organizations, those that had a higher adoption of both modern infrastructure technologies and IT process automation, were far more likely to fuel the success of the larger business than organizations with low adoption level, referred to as *Aging*.[3]

For example, 93% of *Modernized* IT organizations say they are deploying IT services at the pace required by the business versus 51% of *Aging* IT organizations that can make the same claim.

When it comes to high-value, data-intensive workloads, such as SAP, some stark differences emerged as well.

[2] Source: ESG Research Survey, *Enterprise Database Trends*, February 2017.
[3] Source: ESG White Paper, *Insights from Modernized IT: Modular Compute Can Have a Big Impact*, August 2018.

- 87% of *Modernized* IT organizations allocate more than 20% of their compute resources for transformational workloads (such as SAP) compared to only 25% of *Aging* organizations.
- *Modernized* organizations were also 1.75x more likely to report infrastructure performance feeds IT service delivery success.
- *Modernized* organizations were 2x more likely to report infrastructure scalability feeds IT service delivery success.

Modernized IT organizations are better able to serve their business, invest more in high-value workloads, such as SAP, and are more likely to credit infrastructure scalability and performance, such as that which PowerEdge offers, for their success.

The Value of PowerEdge for SAP

Dell EMC PowerEdge, powered by Intel® Xeon® Scalable processors, offers a multi-decade pedigree serving as the bedrock of the modern data center, delivering a consistent and scalable design with intelligent automation and integrated security. As an industry leader, Dell EMC also provides its customers with a robust services and support infrastructure able to serve the global needs of the large enterprise as well as the requests of small businesses. Dell EMC's logistics and manufacturing prowess ensure the right technology stays available and that systems are delivered with consistent quality.

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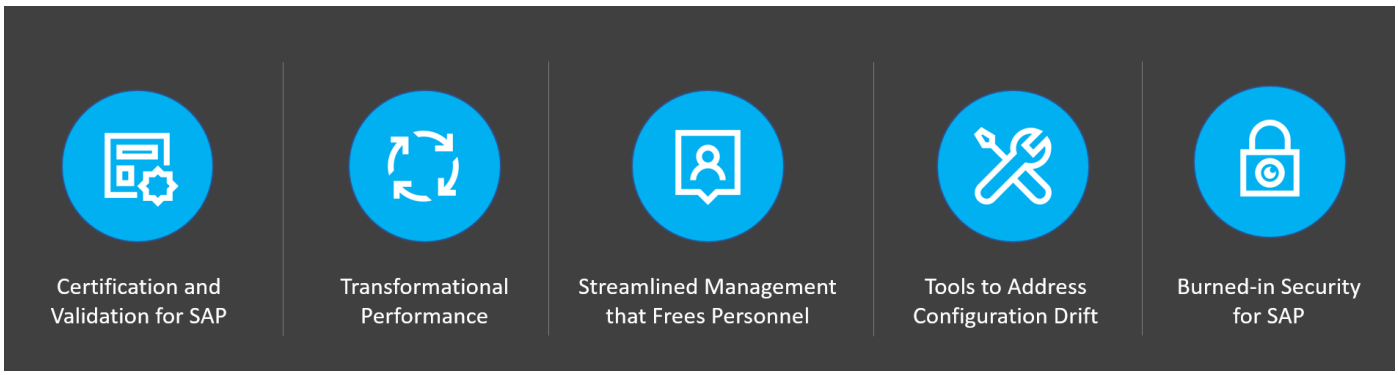
Figure 2. PowerEdge Benefits for SAP



PowerEdge offers several specific innovations integrated into the design to tackle the complexities of SAP environments, including:

- **Certification and validation for SAP:** A foundational element of any enterprise system design is the ability to validate the infrastructure for high-value workloads, such as SAP. Here Dell EMC delivers the expected and takes it one or two steps further. Dell EMC's SAP Certified Servers program delivers tested and validated PowerEdge solutions with support for SAP's Appliance and Tailored Datacenter Integration (TDI) programs. The PowerEdge design specifically focuses on providing users the ability to start small and then scale deployments easily. As part of this design tenet, PowerEdge offers the ability to scale performance without rip-and-replace system upgrades by adding RAM and/or processors. The PowerEdge R840, for example, can start with high availability at 2TB RAM and grow to 6TB of memory without disruption, delivering scalability for SAP HANA deployments.

- **Transformational performance:** Addressing the increasing demand for the insights offered by SAP requires infrastructure performance to consolidate traditional environments and enable SAP HANA deployments. Performance is the most commonly identified attribute IT buyers look for when considering database infrastructure (see Figure 1). PowerEdge delivers performance to consolidate today's siloed SAP environments while supporting future SAP-based initiatives. Additionally, with Dell EMC PowerEdge planned support for Intel® Optane™ DC persistent memory, IT can look forward to emerging use cases for SAP HANA. SAP has partnered with Intel® to optimize SAP HANA 2.0 SPS03 with Intel® Optane™ DC Persistent Memory enabling less downtime and helping to reshape data tiering and in-memory processing for SAP HANA. See Intel® Solution Brief for SAP.

- **Streamlined management that frees personnel:** Just keeping pace isn't transformational. PowerEdge offers management simplification designed to consolidate activities and free resources, rather than simply reduce a few clicks. For virtualization environments, Dell EMC PowerEdge offers OpenManage Integration for VMware vCenter (OMIVV), a native VMware vCenter plug-in. For established, highly virtualized SAP environments, these tools reduce the number of consoles needed to administrate day-to-day operations by integrating Dell EMC hardware management capabilities into the vCenter console. The result streamlines activities, freeing up domain experts to lead value creation projects built upon SAP workloads.

- **Tools to address the hidden risk of configuration drift:** Nothing stays constant, but SAP workloads must stay optimized and secure from day one and for the life of the business. Configuration drift is an often-hidden issue that results from a variety of factors, such as changes to IP addresses, administrator errors, malicious activities, or changes to best practice configurations. Over time, these factors reduce efficiency and hinder security. PowerEdge offers tools, such as System Lockdown, which protects against unintended or malicious changes to the firmware configuration. With this protection in place, server performance remains consistent and data stays secure.

- **Burned-in security for SAP:** Burned-in security must emphasize security at both the hardware and firmware level of a server, by leveraging an immutable Root-of-Trust that can verify subsequent operations within the server. This establishes a chain of trust that extends throughout the server lifecycle, from deployment to decommissioning. PowerEdge, powered by Intel® Xeon® Scalable processors, has extended this silicon-based security to authenticate BIOS and firmware with a cryptographic Root-of-Trust during the server boot process. This type of built-in security across the following areas provides multiple security advantages.

    - **Protect:** Protect server during every stage of the lifecycle, including BIOS, firmware, data, and physical hardware.

    - **Detect:** Detect malicious cyberattacks and unapproved changes; engages IT administrators proactively.

    - **Recover**: Recover BIOS, firmware, and OS to a known good state; securely retiring or repurposing servers.

  PowerEdge also conforms to key industry cryptography and security standards, and performs ongoing tracking and management of new vulnerabilities. Server firmware is designed to obstruct, oppose, and counter the injection of malicious code during all phases of the product development lifecycle. The Secure Development Lifecycle process makes security a priority in every aspect of development, procurement, manufacturing, shipping, and support, resulting in a Cyber Resilient Architecture for SAP.

The Bigger Truth

Transforming SAP to meet the demands of the digital age is like redesigning a car into a rocket ship while the car is currently traveling down the highway at top speed. The business relies on SAP; it cannot go down and it must stay secure.

Effectively modernizing the compute infrastructure to exceed its previous expectations and free the workload to become a driver of new business opportunities and maximize the value of SAP requires the right partner.

This is the complexity of modern SAP environments: the highly virtualized and siloed solutions of the past cannot sustain the business in the digital era, but the workload is just as vital. IT must be able to redesign, such as during a transition to SAP HANA, without any issues, hiccups, or surprises along the way. Workloads such as SAP are simply too important to trust to a partner without the level of innovation, experience, or pedigree of Dell EMC. With the prowess of its PowerEdge portfolio and innovations to cater to the specific needs of SAP, Dell EMC is poised to power SAP applications to meet the needs of the business now and tomorrow.

For more information, visit DellEMC.com/SAP

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