WHITE PAPER

AGILITY, SIMPLICITY, MODERNIZATION:
INTEGRATED PLATFORM APPROACH BRINGS IT GOALS WITHIN REACH

IT taking advantage of new aggregations of servers, open source operating systems and in-memory technology to accelerate business transformation.

CIOs today have more responsibility than ever for fulfilling the business objectives of their organizations. Among the strongest shared business objectives for IT and business leaders: increasing revenue growth, reducing operating costs and driving productivity improvements.[1]

Greater agility, standardization and modernization within IT are key facilitators to achieving these business goals. And key technologies are being adopted to achieve these goals—not only the cloud and big data but also implementation of next-generation data management platforms running on interoperable and reliable operating systems and hardware.

The combined solution of SAP HANA running on Red Hat® Enterprise Linux® for SAP HANA® on Dell platforms addresses these business and technology drivers in a highly integrated, tested and high-performing solution.

1 IDG Research, "State of the IT Organization" study, 2014.

Key Enablers to Achieving Business Goals

New technologies in and of themselves are important only to the extent that they produce positive business outcomes. For example, showing how in-memory technology can speed up analysis of marketing campaign results to get better insights into how advertising budgets should be realigned and distributed is a relevant business outcome aided by technology. When contemplating new technologies—and their potential value to the enterprise—it's important to map them to these common enterprise IT goals: agility, standardization and modernization.

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> — Lis Strenger
> Senior Principal Product Marketing Manager
> Red Hat Enterprise Linux for SAP HANA

AGILITY. All IT organizations strive to be responsive. CIO magazine's State of the CIO 2015 survey showed that increasing productivity and agility represents two of their top four business priorities for IT investments.[2] Yet the demands from existing infrastructure, coupled with the needs for new projects and applications, can be overwhelming. One of the obstacles to agility is simply the time for procurement, installation and integration of new equipment.

As more enterprises move to cloud computing and are transforming their internal data centers with private and hybrid cloud technology, open source operating systems running on high-performance platforms can play a key role in achieving a more agile environment.

IT needs to be able to roll in systems and have them fully integrated with software and networks as fast as other deployment models. That's important, because as IT becomes more responsive to the business, it can reduce the impulse among business units that are tempted to choose shadow IT.

STANDARDIZATION. Now that x86-based systems have achieved the same, and often superior, performance levels as proprietary RISC-based systems, enterprises are moving to standardized technology at a rate not seen since the days when proprietary minicomputers gave way to client/server systems. According to IDC, between 1997 and 2014, UNIX servers dropped from 34 percent to 15 percent of the market whereas x86-based servers went from 22 percent to 74 percent of the market.[3]

Carey Dietert, senior marketing consultant in Dell's Enterprise Solutions Group, notes, "The more customers stay with monolithic and proprietary platforms, the higher the price they pay for maintenance of systems. And with a virtualized platform, the management cost plummets, because you can rotate technology in and out whenever you want."

Whether it's shifting from vendor-specific UNIX variants to open source Linux or moving from proprietary RISC processors to increasingly powerful x86-based systems, the trajectory is toward using industry-standard platforms to achieve greater efficiency. With the ability to use the same operating system and processors across a data center, enterprises can now devote fewer IT resources to the management of disparate systems. Standardization of hardware equals both simplification of management and lower costs for staff and for monitoring tools.

As Lis Strenger, Red Hat senior principal product marketing manager for Red Hat Enterprise Linux for SAP HANA, notes, "Our operating system helps facilitate innovation, simplification through standardization and agility through reliability and interoperability."

MODERNIZATION. The bane of IT—not just recently but perpetually—is the demand for change. IT can be proactive, but the competitive landscape for enterprises is always evolving. Still, legacy systems modernization is the second-most-important current priority for IT, according to IDG's 2015 "Computerworld Forecast" study.[4] IT can create an infrastructure that addresses not only the demands of today's killer apps but also those that will show up tomorrow. Modern infrastructure takes advantage of issues such as standardization and, by doing so, creates a data center that comes as close as possible to the simplification of plug-and-play capabilities.

[2] IDG Research, "State of the CIO" study, 2015.

[3] Richard Villars, IDC Report, "Selecting the Right Platform to Address a Changing Business Environment," December 2013.

[4] IDG Research, "Computerworld Forecast" study, 2015.

By using standardized technology in the data center, enterprises can more easily upgrade systems quickly, based on business demand, and do so in a less costly evolutionary fashion. This more modern approach replaces wholesale, highly expensive upgrades every few years. The days of rip-and-replace are gone.

Achieving business goals requires not just putting the right technology in place but also integrating those technologies into a comprehensive, reliable, tested and high-performing solution. The appliance model, where hardware and software are preintegrated and optimized, enables the modern IT department to speed deployments and decrease time-to-solution.

Technology That Is Driving Change

Let's take a look at some new technologies that are being adopted to meet business goals and examine their impact, individually and collectively. Open source operating systems, hardware appliances, big data and analytics and in-memory performance are all advances that are bringing change and influencing IT infrastructure decisions.

OPEN SOURCE OPERATING SYSTEMS. Open source operating systems have gained popularity in the marketplace at an astonishing rate—the "Future of Open Source Survey"[5] found that the percentage of companies running part or all of their operations on open source software has almost doubled in the past five years. That growth is being driven by cost savings, performance, security and scalability. Among open source benefits is the ability of its development model to allow for constant, ongoing improvements and enhancements from end users and community contributors.

The open source model has reduced costs and delivered the high level of standardization and simplification that IT prizes. Today Linux has become a mainstream solution for general-purpose workloads as well as most high-end market demands. It is the second-most-deployed operating system for servers in the market, according to IDC.[6] In fact, businesses that have modernized their data centers by migrating from proprietary UNIX systems, standardizing operating environments and replacing legacy data management systems have realized significant performance and cost benefits.

HARDWARE APPLIANCES. The emergence of hardware appliances, fully configured with software and optimized for performance, is attractive for any IT administrator familiar with the time involved in system configuration and setup. Preconfigured with software and optimized to run on hardware properly sized for the application, appliances are ready to operate and able to integrate with standard network and storage connections. As software gets smarter and more dedicated to specific (and frequently intricate) tasks, appliances are becoming more popular for their plug-and-play capabilities.

BIG DATA AND ANALYTICS. The introduction of open source technologies such as Hadoop and MapReduce has helped reshape and advance the traditional world of database technologies and data analysis. CIOs now have a wider range of options for compiling and analyzing data, both structured and unstructured, than ever. The opportunity is enticing: the ability to get smarter and provide more insight into the business.

IDG Research's 2014 survey into trends in big data showed its high level of traction within the enterprise.[7] Organizations are seeing exponential growth in the amount of data managed, with an expected increase of 76 percent within the next 12 to 18 months. Furthermore, companies are intensifying their efforts to derive value through big data initiatives, with nearly half (49 percent) of the respondents already implementing big data projects or planning to in the future.

IN-MEMORY PERFORMANCE. Relating closely to the demand for big data is the recently developed capability of in-memory performance. Database management firm McObject ran tests showing that this new technology— which allows for significantly faster analysis of data by use of memory rather than storage—can improve results up to 420-fold over using RAM disks.[8]

Its applicability spans a multitude of industries—from retailers looking at sales data to better understand inventory needs to health care practitioners in search of disease clusters. Increasingly, enterprises are looking to augment their big data capabilities with "fast data" capabilities, and that's where in-memory performance provides the boost.

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[5] Black Duck Software and North Bridge, "Future of Open Source Survey," April 2015, http://www.darkreading.com/risk/most-companies-lack-formal-policies-to-manage-open-source-security-risks/d/d-id/1320037

[6] IDC, "Worldwide Virtual Machine 2014–2018 Forecast: Virtualization Grows, but Competitive Pressures Emerge," December 2014, IDC 252841.

[7] IDG Research, "Big Data: Growing Trends and Emerging Opportunities" study, 2014.

[8] http://www.mcobject.com/in_memory_database

Where to Start: The Data Warehouse

A likely place in today's modern enterprise to start applying these new philosophical precepts of modernization and simplification is the data warehouse, as it impacts multiple facets of the company and can help achieve business goals.

What's the historical picture of data? Most likely it sits in silos in aging legacy systems that are labor-intensive to manage and prohibitively expensive to maintain. Its value diminishes, because of IT's inability to aggregate and analyze it. Now consider the boom in devices that collect and update data, whether they're smartphones, sensors, point-of-sale terminals or something else. The volume of data that enterprises collect is greater than ever.

Big data delivers value to the business when that data is transformed into insights and advantage. It takes multiple disparate data sources, structured or unstructured, and lets enterprises unlock the value of the data within. It empowers IT to help the business not only unlock the insights that have lurked within for many years but also accommodate the collection of new data and insights going forward.

Data analytics ties directly into business needs—crunching data, providing insight into trends and opportunities.

Better Together

Applying the technologies we've just explored along with the required business outcomes we've outlined, there is immediate value in the combined solution of SAP HANA, Red Hat Enterprise Linux and Dell servers. This solution provides the benefits of an appliance, the flexibility of open source software and standardized hardware and the technology advances of in-memory performance. This provides an answer to big data needs and the ability to achieve the business goals of agility, standardization and modernization.

RED HAT. With this solution, Red Hat provides the operating system for the integrated platform. Red Hat also contributes to its ongoing development and improvement and offers the levels of support that IT departments demand. More than 90 percent of Fortune Global 500 companies use Red Hat products and solutions.[9] Red Hat's larger open source solutions portfolio extends to the entire enterprise, supporting development of all types of application and data center initiatives, from private clouds to hybrid clouds.

DELL. Using its PowerEdge systems as a building block, Dell provides the standardized and simplified hardware for the platform, incorporating as well the ability for enterprises to upgrade their appliances based on demand and usage. Because high-speed analytics with large data sets is increasingly mission-critical, all SAP HANA platforms exceeding 512GB are engineered for high availability.

SAP. As one of the earliest developers of in-memory technology, SAP provides its groundbreaking HANA database technology. Using its in-memory capabilities, enterprises can take advantage of performance heretofore unseen in data warehouse analytics.

SAP HANA not only provides faster processing of data but can also bring the costs of deployment down. According to Forrester Research's total economic impact study, the SAP HANA platform can save an organization 37 percent across hardware, software and labor costs.[10]

These vendors have gone a step further in the goal of simplification to make IT's job easier. They have integrated, configured and tested all of their respective contributions so that enterprises can implement the consolidated platform quickly and efficiently. They have orchestrated their efforts so that IT doesn't have to.

The result: The Dell and Red Hat Enterprise Linux for SAP HANA solution moves IT departments closer to the vaunted goals of agility, simplicity and modernization. By helping enterprises attack multiple pain points—from cost and reliability to procurement and support—the solution brings them one step closer to solving a multitude of pressing technological and business problems.

The Dell and Red Hat Enterprise Linux for SAP HANA solution represents the concerted efforts of three vendors, and they have simplified its acquisition. The total solution can be fulfilled by Dell as an appliance or as a tailored solution, complete with installation and other Dell services and seamless single-ticket support from Dell, SAP and Red Hat.

For more information, visit **http://www.dell.com/hana** and **http://www.redhat.com/en/resources/red-hat-enterprise-linux-sap-hana**. ■

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[9] Red Hat client data and Fortune Global 500 list, 2014, cited at http://www.redhat.com/enterprisers/

[10] http://www.news-sap.com/forrester-study-savings-potential-sap-hana/