

LENOVO'S SCALABLE SOLUTIONS FOR SAP APPLICATIONS

LENOVO AND NUTANIX SPEED TIME TO VALUE WITH THE LENOVO THINKAGILE HX SOLUTION FOR SAP HANA

EXECUTIVE SUMMARY

Businesses undergo digital transformation to make smarter decisions faster. As a result, digital transformation drives businesses to embrace new IT architectures as they try to take advantage of new data sources and make better decisions. SAP is a leader in providing the software to help automate, run and bring insight to enterprises, but achieving business efficiency starts with deployment and optimization that can be complex for the enterprise IT organization. Indeed, **how** SAP applications are deployed can have a huge impact on how quickly and efficiently businesses operate and how insights can be gleaned. More than just buzzwords, time to value, performance, agility and availability measure the success of SAP deployment.

How can business units leverage the power of SAP faster? And how can IT organizations reduce the cost and complexity of deploying and managing SAP environments?

This paper will explore how SAP applications can drive business benefits and why businesses may find HANA on the Lenovo ThinkAgile HX Solution for SAP HANA with Nutanix Enterprise Cloud Software a strong, scalable and efficient solution for running an SAP environment.

TODAY'S CUSTOMER NEEDS

Businesses need to be more agile and have more actionable intelligence to stay competitive as cycles no longer allow the luxury of pondering data. Decisions must happen quickly - in real time. Decision makers need to access, model and analyze data instantaneously – no matter where it resides or originates – as actionable data comes from a wider range of sources and inputs than ever before. Enterprise resource planning (ERP) software, business intelligence (BI), structured and unstructured analytics, and decision support can help customers store, analyze and act on data to run their businesses. However, the scalability demanded now surpasses traditional architectural limits for many business-critical applications, including decision making

applications. We live in a world where one may not know what questions will need to be answered in the future, which further complicates the selection of data decision tools. Flexibility is paramount.

The cost and time to deploy often slows the decision to move forward. Many IT organizations struggle with the options for what to deploy and then struggle with the implementation details. If businesses accelerate the time-to-market for deploying these SAP landscapes, they may improve their return on investment and increase their velocity. Businesses must have scalability and flexibility to keep from being restricted by their deployment choice. With edge computing and IoT bringing new data streams that enhance insight, systems need to be flexible enough to adapt to different types of data from other sources - sometimes from outside the enterprise. Rather than finding the proverbial “needle in the haystack”, which drove the architecture of the old data warehouse solutions, this fluid environment becomes more about connecting the dots to see trends in data.

LENOVO & SAP ADDRESS SCALING NEEDS

Almost any SAP environment can take advantage of new, more scalable infrastructure. In any deployment, from SAP Business Suite NetWeaver applications all the way through SAP S/4HANA and BW/4HANA, simplifying management, ensuring performance and increasing availability benefit from consolidation. In fact, many advantages of Lenovo’s scalable architecture can extend out to other tiered enterprise architectures that drive businesses and their decision making. The change from a legacy deployment of physical or virtual servers and SAN to a more scalable hyperconverged cluster brings new levels of flexibility when consolidating classic SAP landscapes, including relational database management systems (RDBMS).

SAP HANA is designed as a large, in-memory platform that better enables business processes and real time analysis. Data is in-memory, not stored and retrieved in separate hard disk drives or solid state drives like a traditional RDBMS. SAP HANA processes transactions and analytics in-memory on a single data copy, resulting in faster data analysis while reducing system requirements and enabling greater consolidation.

Among large, data-driven business applications, standard SAP applications and SAP HANA, it is clear that a flexible, agile and scalable solution is the only smart choice, as the data landscape is changing quickly and businesses need to respond accordingly.

THE COMPLETE LENOVO / SAP ADVANTAGE

Lenovo is a [key partner](#) of SAP, extending back to the early work with IBM. As Lenovo acquired IBM's x86 server business, it gained more than just a portfolio of products. Lenovo gained knowledge, expertise, R&D and a deep, working relationship with SAP.

As previously mentioned, deploying SAP applications and landscapes is typically a complex, long-term operation, which is the primary driver for Lenovo's value: dramatically cut deployment time and accelerated time to value. This strategy helps customers boost ROI, reduce complexity and simplify management - all things that Lenovo is known for delivering well.

SAP is so confident in Lenovo's solutions and capabilities that it uses Lenovo for much of its own in-house development platforms and runs many of its own production environments, like CRM and customer enterprise cloud. In turn, Lenovo also runs SAP software to help drive its business, giving it unique insight in real world conditions as a customer, a fact that Lenovo's end customers can appreciate.

SAP and Lenovo have innovated together with business warehouse data tiering solutions, 24TB SAP HANA configurations, as well as SAP Data Hub, along with teaming to drive application performance optimization. Lenovo's ThinkAgile HX Solution for HANA is a preconfigured solution that enables medium and large businesses to immediately harness the real time power in their environments.

Lenovo has been such a strong partner for SAP that the company was awarded the [2019 SAP Partner of the Year](#) for infrastructure. This award was given in part to Lenovo's ability to deliver innovative solutions across a range of SAP deployment models.

LENOVO AND NUTANIX – PERFORMANCE MEETS SIMPLICITY

The power of SAP HANA can come at a cost. HANA deployments and optimizations can be complex and ongoing management can be taxing to an IT organization. For these reasons, IT organizations have deployed SAP HANA in virtualized environments. This deployment model enables greater scale, higher resource utilization, lower total cost of ownership (TCO) and simplified management.

The ThinkAgile HX Solution for SAP HANA extends those measures of success by enabling business organizations to realize value faster by responding to the needs of

customers faster. Some of the benefits to deploying SAP in a ThinkAgile HX Solution environment include:

- **Faster time to value** – as previously mentioned, deploying SAP on a ThinkAgile HX Solution powered by Nutanix can greatly reduce the amount of time it takes for the business to realize value. It begins with the ThinkAgile HX platform jointly optimized by Lenovo and Nutanix for maximum SAP performance. It continues with a deployment and environment tuning by Lenovo engineers certified and experienced in SAP environments.
- **High performance SAP environment** – The ThinkAgile HX Solution powered by Nutanix is a highly performant SAP platform. This is partly due to system optimizations implemented by the joint Lenovo/Nutanix team. Part of this is engineering agility. By certifying the ThinkAgile HX Solution for Intel's 2nd Generation Scalable Xeon processor. SAP environments are set to take performance to a new height.
- **Optane aware** – Nutanix enables a level of data locality that should enable markedly faster analytics performance from SAP HANA – which means faster time to intelligence for the business. If the joint engineering teams certify the ThinkAgile HX Solution for Intel Optane persistent memory in AppDirect mode¹, analytics performance should reach even greater levels of performance. Because of Optane's persistent nature, large data sets are able to reside in memory stores directly attached to the compute power of Xeon. This architecture can significantly reduce the time for ThinkAgile HX to produce intelligence.
- **Cloud Economics** – One of the great values of the cloud is the ability to pay for only the resources you consume. And the ability to grow granularly. Scale compute as necessary. Scale storage as necessary. By deploying SAP on Nutanix powered Lenovo infrastructure, IT organizations can take advantage of the same granular scalability benefits. Invest in the infrastructure needed for today and increase capacity as needed – inline and without disruption of the SAP environment.
- **Greater Resilience** – Virtualization yields application and data resilience. Nutanix's Enterprise Cloud software, combined with highly reliable Lenovo servers, will enable an SAP environment that can achieve high levels of availability.

¹ Moor Insights & Strategy does not imply that Nutanix and Lenovo will certify the ThinkAgile HX for SAP solution for Optane in AppDirect mode. The author merely states the benefits that could be derived if, in fact, such certification took place.

- Quick Recovery – System restarts on ThinkAgile HX platforms powered by Intel’s 2nd Generation Scalable Xeon CPUs can reduce system restart times. When Optane persistent memory is certified for the platform, those restart times should be further reduced - up to 12.5 times faster by [some estimates](#).²
- ROI/TCO – What this should all add up to is IT organizations realizing significant TCO savings. In [one study](#), comparing a Nutanix platform to a traditional three tiered architecture saw a 60% reduction in TCO and an incredible 534% ROI over a five-year life cycle (a 7 month payback on investment). Moor Insights & Strategy believes these numbers can be even greater given the additional CapEx and OpEx savings associated with an SAP environment.

HOW LENOVO & NUTANIX DIFFERENTIATE SAP LANDSCAPES

The Lenovo/Nutanix solution is SAN-less, which differentiates it powerfully in the market and removes the largest impediment to quickly and easily deploying SAP solutions. Specifically, the ThinkAgile HX Solution for SAP removes the infrastructure silos associated with deploying SANs that introduce complexity in terms of deployment, maintaining and management.

The Lenovo ThinkAgile HX Solution for SAP derives flexibility and scalability from the Nutanix Enterprise Cloud OS, which virtualizes compute and storage. This accelerates system copies and database clones (for non-HANA landscapes) while also allowing the solution to cost-effectively scale up as application server data and needs grow. Should IT need to integrate with a SAN for backup or disaster recovery, Lenovo Services can provide an SAP HANA Tailored Datacenter Integration (TDI) linkage.

This consolidated solution reduces rack space, power, cooling, management needs and enables both reduced costs and headroom for future scaling. Nutanix and Lenovo have worked to consolidate SAP NetWeaver landscapes onto a single dense virtualized platform, reducing the footprint by up to 80% while driving better efficiency to support business needs. Lenovo and Nutanix claim to help reduce both resources and budgets by providing a cost-effective solution that requires less hand-holding and fewer specialized skills, netting a lower operational cost while still delivering outstanding performance and availability.

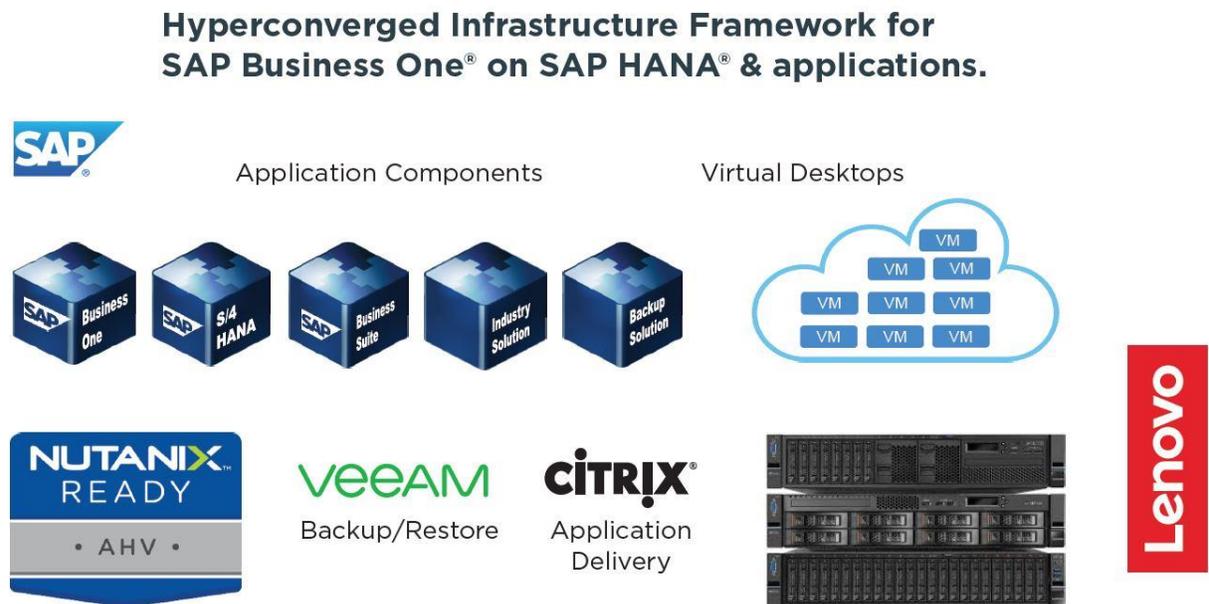
² Increase was measured restarting a bare metal SAP HANA 2.0 SPS 03 instance, 6TB in size. For system configuration information, please see: <https://www.intel.com/content/dam/www/public/us/en/documents/solution-briefs/optane-persistent-memory-sap-hana-solution-brief.pdf>

Both Lenovo and Nutanix have partnerships with SAP, creating a stronger 3-way bond for development and support. Lenovo XClarity and Nutanix Prism are integrated for better system status/health, planning, and insight while reducing management costs. This management layer requires fewer staff and a smaller budget, so IT can spend more time driving value to the business..

THE LENOVO / NUTANIX ARCHITECTURE

As previously mentioned, ThinkAgile HX Solution for HANA is designed for maximum flexibility and ROI with a single architecture that can scale both up and out. The Lenovo ThinkAgile HX7820 Series Appliance with Nutanix delivers scalable infrastructure that can grow flexibly as more needs are uncovered or more systems are connected.

FIGURE 1: THE LENOVO & NUTANIX ARCHITECTURE



Source: Lenovo and Moor Insights & Strategy

The ThinkAgile HX7820, the underlying HCI platform, supports the Lenovo and Nutanix SAP HANA solution. The ThinkAgile HX Solution for HANA builds on the ThinkSystem SR950, a 4U, 4 socket server known for performance. The Nutanix Enterprise Cloud OS installed on the ThinkAgile HX7820, provides a scalable HCI platform that runs SAP NetWeaver, SAP S/4HANA, SAP HANA production databases and the SAP Business Suite applications. The entire suite is built, configured and certified by Lenovo. Then the SAP software install is completed at the customer site by Lenovo Professional Services.

This single architecture is easily integrated and helps take the guesswork out of deploying SAP applications, delivering faster time to result. The scalable nature leaves no need to overbuy or overprovision to be protected for future growth.

HOW CUSTOMERS ARE DEPLOYING LENOVO / NUTANIX TODAY

Lenovo is an SAP HANA leader with more than 12,000 deployments worldwide running on Lenovo platforms, and Nutanix leads in solutions for those deploying on hyperconverged systems. [V-GRASS](#) is a good example of a customer running its SAP environment on a Lenovo and Nutanix optimized solution.

V-GRASS is a retailer in the rapidly changing fashion industry. It needs to stay ahead of trends and must deal with inventory and longer-lead decisions that require maximum insight. The company has deployed SAP HANA now to help in-house design teams move faster, make better decisions and capture more opportunity.

The business employed SAP HANA on two Lenovo System x3690 servers and used Lenovo Converged HX appliances running Nutanix to host the SAP Business Suite, SAP Business Warehouse and SAP Fashion Management applications. When deployed, reporting changed dramatically; reports that normally took 10 hours to retrieve were now available in real time for immediate access. IT saw benefits as well, with two-thirds less floor space consumed and significantly reduced operational costs.

CALL TO ACTION

The SAP Business Suite applications and other decision support software can help businesses run more efficiently and act with more agility during this time of digital transformation when insight becomes the currency of future success.

The SAP Business Suite helps drive better decision making, and SAP S/4HANA furthers that process by delivering real time analytics. The Lenovo ThinkAgile HX Solution for SAP HANA delivers the flexible support for deploying in a scalable fashion to meet changing business needs. With no SAN required for Lenovo's scale-out implementation, the solution can be deployed much faster, providing more flexibility and scaling rapidly as needs grow and change.

Still, the power of SAP comes with a cost. Potentially complex deployments that require overprovisioning to account for future growth married with dedicated resources for optimizing, tuning and ongoing management can quickly overwhelm any IT organization.

If an organization seeks to leverage the power of SAP in its business, Moor Insights & Strategy recommends it should strongly consider the Nutanix/Lenovo ThinkAgile HX Solution. Faster time to value, simplified management and lower TCO ease the challenges of IT while meeting the needs of the business.

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