ThinkAgile VX V4 Solution for SAP HANA

Solution Brief

SAP HANA has become the database foundation for SAP S/4HANA, SAP BW/4HANA, and a growing range of analytics applications. As organizations complete their move from legacy ERP and run more of the business on live in-memory data, the infrastructure underneath SAP HANA has to deliver predictable performance while staying simple to operate and easy to expand.

Hyperconverged infrastructure has matured to meet that need. With VMware vSAN ESA running on all-NVMe storage, a properly sized and SAP-supported cluster provides the persistence performance SAP HANA requires without a dedicated storage tier. The arrival of Lenovo ThinkAgile V4 systems, based on Intel Xeon 6 processors with Performance cores (P-cores) and DDR5 memory, gives SAP customers a new generation of certified nodes on which to build that platform.

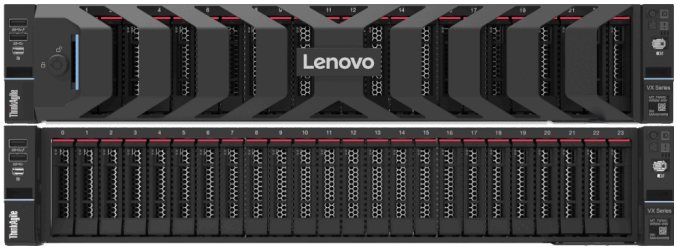


Figure 1. ThinkAgile VX650 V4 and VX850 V4 for SAP HANA

Business Challenge

Traditional three-tier SAP HANA infrastructure, with separate servers, storage networks, and SAN arrays, creates cost and complexity that grows with every new system. Organizations commonly face the following problems:

- Over-provisioning: because future memory and storage needs are hard to predict, expensive SAN capacity is bought years ahead of demand, tying up capital that delivers no value on day one.
- Complex procurement and upgrades: expanding a storage array or adding a tier is a project in its own right, with lengthy procurement cycles and planned downtime.
- Fragmented lifecycle management: servers, storage, and network are patched and updated with different tools on different schedules, consuming scarce IT skills and slowing the delivery of new SAP services.
- Performance pressure: growing data volumes and demand for real-time reporting expose I/O bottlenecks in shared storage.
- Migration risk: moves from legacy ERP to SAP S/4HANA demand a target platform that is stable from the start and does not need to be rebuilt as the landscape grows.

The challenge is to establish a scalable, resilient foundation for SAP HANA that simplifies operations and allows predictable investment without compromising availability.

Solution

Platform components

- Lenovo ThinkAgile VX650 V4: a 2-socket node with Intel Xeon 6 processors with P-cores (Granite Rapids), up to 4 TB of Lenovo TruDDR5 memory, and up to 24 2.5-inch NVMe drives
- Lenovo ThinkAgile VX850 V4: a 4-socket (Granite Rapids) node for larger SAP HANA instances. SAP HANA certification for the VX850 V4 is pending; see Workloads for status
- VMware software: VMware ESXi, vSphere, and vSAN ESA, factory-integrated and preconfigured as part of VMware Cloud Foundation (VCF) 9 or VMware vSphere Foundation (VVF)
- Lifecycle management: vSphere Lifecycle Manager (vLCM) with the Lenovo XClarity Integrator hardware support manager updates ESXi, drivers, and Lenovo firmware together from a single validated image

How it addresses the challenge

vSAN ESA pools the NVMe drives in every node into a single datastore, removing the separate SAN tier and its procurement cycle. Storage policies set resilience per virtual machine, while vSphere HA and vMotion keep SAP HANA services available through host maintenance. Because capacity arrives in node-sized increments, organizations buy what current workloads require and add nodes non-disruptively as the landscape grows.

Lenovo supports the complete solution through a single point of contact, backed by Lenovo SAP specialists. Optional Lenovo Premier Support adds 24/7 direct access to advanced technicians.

ThinkAgile VX SAP HANA Nodes

Supported SAP HANA Gen 4 configurations using 2 or 4 sockets

Model Name	**ThinkAgile VX650 V4**	**ThinkAgile VX850 V4 ***
Machine Type/Model	7DG6CTO4WW	7DRHCTO1WW
Processor	2x Intel Xeon P-Core processors (6th Gen)	2x or 4x Intel Xeon P-Core processors (6th Gen)
Memory	Up to 4TB (using 128GB TruDDR5 DIMMs)	tbd*
Max number of supported SAP HANA VMs	Up to 4 half-socket VMs	tbd*
Max/Min VM sizes	128GB half-socket VM - 4TB wide VM	tbd*
Drive Bays	Up to 24x 2.5" SSD drives	
Cluster size	3-64 nodes (min 4 recommended)	
Disks allowed (ESA)	4 – 24 NVMe	
Capacity	Any Lenovo Read-Intensive or Mixed-Use NVMe SSD (max 24)	
Network	Recommended 4x 25GbE or higher	
Hypervisors Preloaded and Supported	VMware ESXi/vSAN 9.1 and higher	tbd*

* Note: SAP HANA certification for ThinkAgile VX850 V4 is pending approval

Use Cases

1. **Real-time analytics on live SAP data**
   Manufacturing, logistics, and retail organizations need forecasting and operational reporting on current SAP data, but complex SAP HANA reports can be slowed by shared storage contention. Deploying VX650 V4 nodes with large DDR5 memory footprints and all-NVMe vSAN ESA storage gives in-memory datasets fast persistence and fast restart. Analytics can run closer to production data, with resource controls in vSphere helping protect ERP transaction performance
2. **Growing the SAP landscape during S/4HANA transformation**
   Enterprises migrating from legacy ERP to SAP S/4HANA often cannot predict how many systems, tenants, and test copies they will need over the next three to five years. Starting with a small cluster of VX650 V4 nodes, organizations can add nodes non-disruptively as new production, quality, sandbox, and project systems come online. Each node also raises the memory available for additional SAP HANA virtual machines, while a single SAP HANA instance remains sized within one host. Lenovo TruScale can align payment with this growth if a consumption model is preferred.

Business Outcome

Running SAP HANA on ThinkAgile VX V4 delivers the following outcomes:

- Lower upfront investment: capacity is bought in node increments as demand appears, rather than over-provisioned SAN storage purchased on day one
- Simpler operations: one cluster, one management plane, and one validated update image for software and firmware reduce the effort to keep SAP infrastructure current
- Non-disruptive growth: nodes join the cluster without SAP application downtime
- Higher availability: vSAN storage policies, vSphere HA, and vMotion protect SAP HANA services through hardware failure and planned maintenance
- Single point of entry for support: Lenovo solution support handles hardware, VMware software, and SAP solution questions through a single contact point

Lenovo has not published TCO or performance figures for this specific configuration. For sizing and cost modeling, contact a Lenovo representative.

Conclusion

The Lenovo ThinkAgile VX Solution for SAP HANA enables businesses to accelerate decision-making and gain insights into key trends locked in their data, while simplifying their IT infrastructure and driving costs down. The combination of preloaded easy-to-use VMware virtualization software on powerful, extremely reliable Lenovo hardware provides the ideal infrastructure platform for SAP HANA and other SAP applications. Organizations can start with what they need today, grow the SAP landscape without disruption, and rely on a single Lenovo point of contact for support. It gives SAP HANA a platform that is simple to operate and ready to grow with the business.

For More Information

- Lenovopress Product Guide - ThinkAgile VX650 V4
- Lenovopress Product Guide - ThinkAgile VX850 V4
- Reference Architecture: SAP Applications using Lenovo ThinkAgile VX Series
- Configurations: Deployment Ready Solutions for ThinkAgile VX
- SAP Hardware Directory for Lenovo HCI Solutions
- SAP WIKI: SAP HANA based Applications on VMware vSAN in VCF (SAP HANA HCI)
- SAP Note 3703816 - SAP HANA on VMware vSphere and vSAN in VCF 9

Related product families

Product families related to this document are the following:

- ThinkAgile VX Series for VMware

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