

ThinkAgile VX 4U Sets World Record with New SAP BW Edition for SAP HANA (41.6B Records) Benchmark Result

Performance Benchmark Result

Lenovo ThinkAgile VX 4U Certified Node, powered by VMware vSAN and using Intel Xeon Platinum 8260L processors, delivers world record performance for all three KPIs for SAP BW edition for SAP HANA Standard Application Benchmark Version 3 using 32 datasets with 1.3 billion records each (total 41.6 billion records) in a scale-out configuration.

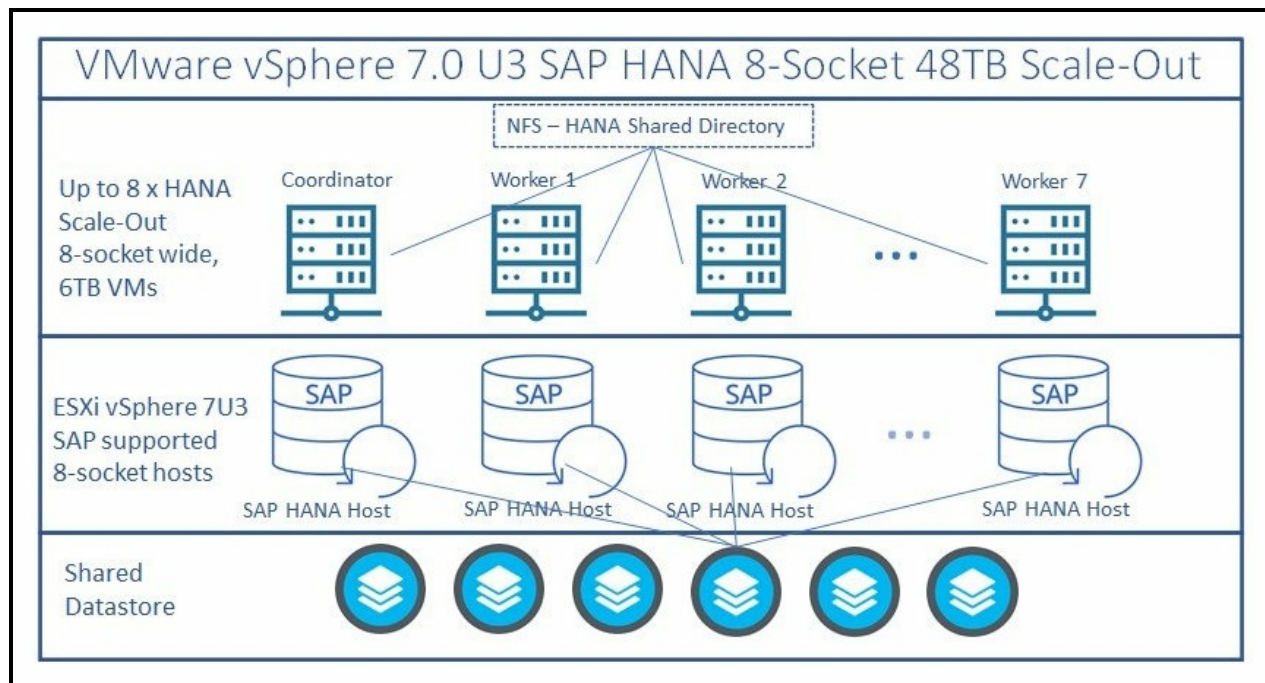


The benchmark refers to the SAP Business Warehouse (SAP BW) application running on the SAP HANA database. The benchmark consists of three phases and the VX 4U Certified Node server achieved the following performance results (1):

- **Phase 1: Data load phase = 17,648** (Runtime of last Data Set in seconds)
- **Phase 2: Query throughput phase = 4103** (Query Executions per Hour)
- **Phase 3: Query runtime phase = 169** (Total Runtime of complex query phase in seconds)

Enterprises running large systems on SAP HANA can benefit from fully scalable and optimized infrastructure in the data center. The SAP BW, edition for SAP HANA, benchmark on ThinkAgile VX 4U Certified Node demonstrates that they can provide the headroom for fast growth in data volumes used by systems running on SAP HANA in VMware virtualized environments.

The following graphic shows, a Scale-Out cluster based on 8-socket hosts with a shared storage solution.



Data growth can easily be accommodated with additional capacity and scalable performance when required with fast to setup and easy to manage SAP-certified ThinkAgile VX infrastructure.

The configuration for the benchmark was comprised of four nodes, 1 Master node and 3 slave nodes, each configured as follows:

- Eight Intel Xeon Platinum 8260L Processors
 - 2.40 GHz base frequency
 - 64 KB L1 cache and 1024 KB L2 cache per core
 - 35.75 MB L3 cache per processor
 - 192 total cores / 384 total threads
- 24,576 GB (24 TB) DDR4 system memory
- VMware ESXi 7.0 U3
- SUSE Linux Enterprise Server 15 SP3 for the virtual machine
- SAP HANA 2.0
- SAP NetWeaver® 7.50
- One VM with 384 vCPUs and 5.89 TB DRAM

Results referenced are current as of October 31, 2022. For the latest SAP BW benchmark results, visit:

<https://www.sap.com/dmc/exp/2018-benchmark-directory/#/bwh>.

(1) This benchmark fully complies with the SAP Benchmark Council regulations and has been audited and certified by SAP SE ([certification number 2022026](#)). Details can be obtained from Lenovo and SAP. The benchmark was performed at the Lenovo Data Center Performance Lab in Walldorf, Germany, by Lenovo engineers. Configuration: 4x ThinkAgile VX Certified Nodes each configured with 8 processor / 192 cores / 384 threads, Intel Xeon Platinum 8260L processors, 2.40 GHz, 64 KB L1 cache and 1024 KB L2 cache per core, 35.75 MB L3 cache per processor, 24,576 GB DRAM.

About the ThinkAgile VX 4U Certified Node

Differentiating yourself from the competition is vital in today's fast-moving business environment. To support your business, IT systems must be simple, agile, and cost-effective so you can meet your customers' requirements to always be online. Lenovo ThinkAgile VX Series enables you to meet these requirements by focusing on the business outcome you require, rather than on building your infrastructure.

ThinkAgile VX Series, powered by VMware vSAN, is available in several models. Each is preconfigured, pretested, and optimized to provide the simplest way to bring a new VMware hyperconverged environment online. VX Series can integrate easily into an existing VMware environment.

Designed for any size business from SMBs through large enterprises, VX Series can be used as infrastructure for remote office/branch office (ROBO) and retail stores as well as virtual desktop infrastructure (VDI) and enterprise applications.

Several common uses for the ThinkAgile VX Certified Node that is optimized for high-performance workloads include SAP HANA, e-mail and collaboration, and workload-balancing clusters.

About the SAP BW edition for SAP HANA Benchmark

The SAP BW, edition for SAP HANA Standard Application Benchmark, Version 3, is the latest addition to the list of benchmarks for SAP Business Warehouse. It utilizes the capabilities of SAP HANA to process the benchmark workload. Allowed data volumes are a multiple of 1.3 billion initial records and can be run in single-node and multi-node setups. This benchmark was released in July 2018.

The benchmark scenario represents typical mid-size customer scenario and volumes for SAP BW running on SAP HANA. The benchmark simulates a variety of users with different analytical requirements and measures the key performance indicator (KPI) relevant to each of the three benchmark phases.

The three benchmark phases are as follows:

1. Data load phase, testing data latency and load performance
2. Query throughput phase, testing query throughput with moderate complex queries
3. Query runtime phase, testing the performance of running very complex queries

For more information about the benchmark, go to <https://www.sap.com/about/benchmark.html>.

Learn more

To learn more about business warehouse and data analytics solutions for SAP applications running on Lenovo Servers visit, <https://www.lenovo.com/us/en/data-center/solutions/sap/> or contact your Lenovo Customer Representative.

To learn more about the Lenovo ThinkAgile VX Certified Node, see the following web pages:

- ThinkAgile VX Solution for SAP HANA Datasheet:
<https://lenovopress.lenovo.com/datasheet/ds0118-thinkagile-vx-series-for-sap-hana>
- ThinkAgile VX 4U Product Guide:
<https://lenovopress.lenovo.com/lp1490-thinkagile-vx7820-vx-4u>

Related product families

Product families related to this document are the following:

- [SAP Alliance](#)
- [SAP BW Benchmark Results](#)
- [ThinkAgile VX Series for VMware](#)

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