ThinkSystem SR860 V2 Sets a World Record for Phase 2 with New SAP BW Edition for SAP HANA (7.8B Records) Benchmark Result

Performance Benchmark Result (withdrawn product)

Lenovo ThinkSystem SR860 V2 using Intel Xeon Platinum 8380HL processors delivers world record performance for Phase 2 for SAP® Business Warehouse, edition for SAP HANA® Standard Application Benchmark Version 3 with 7.8 billion (7.8B) initial records in a single-node setup.

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 SR860 V2 server achieved the following performance results (1):

- **Phase 1: Data load phase = 12,733** (Runtime of last Data Set in seconds)
- **Phase 2: Query throughput phase = 4,766** (Query Executions per Hour)
- **Phase 3: Query runtime phase = 92** (Total Runtime of complex query phase in seconds)

The SR860 V2 was configured as follows:

- Four Intel Xeon Platinum 8380HL Processors, 2.90 GHz
  - 112 total cores / 224 total threads
  - 64 KB L1 cache and 1024 KB L2 cache per core
  - 38.5 MB L3 cache per processor
- 1,536 GB DRAM system memory
- 3,072 GB of persistent memory using Intel Optane Persistent Memory 200 Series
- SUSE Linux Enterprise Server 15 SP2
- SAP HANA 2.0
- SAP NetWeaver® 7.50

Results referenced are current as of June 22, 2021. 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 2021049). 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: ThinkSystem SR860 V2 with 4 processor / 112 cores / 224 threads, Intel Xeon Platinum 8380HL processors, 2.90 GHz, 64 KB L1 cache and 1024 KB L2 cache per core, 38.5 MB L3 cache per processor, 1,536 GB DRAM, 3,072 PMem.

About the ThinkSystem SR860 V2

The Lenovo ThinkSystem SR860 V2 server provides the speed and reliability you require today, with the scalability and workload versatility to you'll need to manage the explosive growth of data; its design offers considerable adaptability in order to match system configurations to projected workloads.

The ThinkSystem SR860 V2 is purpose-built to deliver affordable scalability in an industry-standard x86 platform, ideal for mission critical workloads such as SAP HANA in-memory computing, transactional databases, analytics, big data, and enterprise resource planning tasks.

Up to four 250W third-generation Intel® Xeon® Scalable CPUs configured with a mesh topology pair with up to four enterprise-class GPUs position the SR860 V2 to tackle compute-intensive applications, leveraging thousands of GPU processor cores and parallel architecture in combination with additional storage and networking that's both high-performing and flexible.

Key features:

- Up to four 250W 3rd Generation Intel Xeon Scalable CPUs configured with a mesh topology combines with up to 48 2.5" HDD or SSDs, of which 24 can be NVMe SSDs to speed database response times, reducing latency and eliminating storage as the throughput bottleneck in I/O-intensive applications such as transactional processing, HPC, and Big data applications.
- Supports two or four processors, allowing you to start with two processors and then upgrade to four when you need it.
- Capability to handle four double-width GPUs or eight single-width GPUs to accelerate AI inference and deep learning proficiencies.
- Support for up to 12TB of DDR4 memory with DIMMs operating at up to 3200 MHz at 2DPC, and Intel Optane™ Persistent Memory 200 Series accelerates performance for in-memory databases and applications, reducing downtime and increasing application availability.
- High I/O bandwidth coupled with a generous number of PCIe expansion slots provides the additional connectivity scalability as your business and workload demands increase.
- Full Lenovo XClarity and ThinkShield system support for seamless infrastructure management and improved data security.

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 ThinkSystem SR860 V2 server, visit the SR860 V2 product web page: https://www.lenovo.com/us/en/data-center/servers/mission-critical/ThinkSystem-SR860-V2-Server/p/77XX7HS86V2

Related product families

Product families related to this document are the following:

- 4-Socket Rack Servers
- SAP Alliance
- SAP BW Benchmark Results
- ThinkSystem SR860 V2 Server

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