HPE ProLiant Compute DL380a Gen12 server: most energy-efficient 4U server

Key takeaways

HPE ProLiant Compute DL380a Gen12 server achieved:

- Most energy-efficient 4U server
- Most energy-efficient 4U server running Linux
- Most energy-efficient 4U server running Windows
- First 4U server to break the 20,000 overall ssj_ops/watt barrier
- Significant generational gains compared to the HPE ProLiant DL380a Gen11 Server
  - 57% generational gain on Linux
  - 42% generational gain on Windows

The stated results are published as of 02-25-2025; see spec.org.

Three world records with Intel® Xeon® 6 processors on SPECpower_ssj® 2008 benchmark

Executive summary

The next-generation HPE ProLiant Compute DL380a Gen12 server with Intel Xeon 6 processors achieved the world record for 4U servers on the SPECpower_ssj 2008 benchmark with a score of 23,276 overall ssj_ops/watt running on a Linux® operating system and 21,837 overall ssj_ops/watt running on a Windows operating system. These results also denote the most energy-efficient 4U server results running both Linux and Windows operating systems. The HPE ProLiant Compute DL380a Gen12 server achieved significant generational performance gains compared to the results of the HPE ProLiant DL380a Gen11 server with prior-generation Intel Xeon processors.The benchmark scores provide confidence for customers seeking sustainable IT deployments..

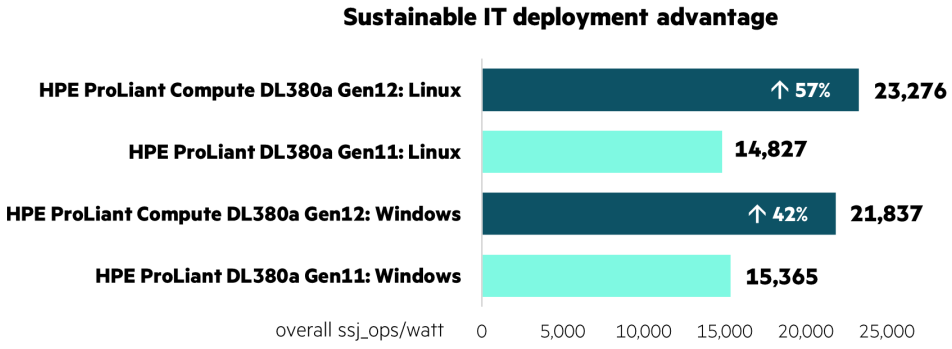

Figure 1. Generational comparison of SPECpower_ssj 2008 benchmark scores

Next-level security, performance, and efficiency

HPE ProLiant Compute DL380a Gen12 server

The HPE ProLiant Compute DL380a Gen12 server is engineered with an ultra-scalable architecture to deliver next-generation AI performance for your enterprise needs. The “a” stands for accelerator optimized. Powered by Intel Xeon 6 processors and up to eight cutting-edge double-wide GPUs, the 4U HPE ProLiant Compute DL380a Gen12 server is a cost-effective AI solution. It accelerates AI inferencing for large workloads with unprecedented performance, enterprise-grade reliability, and industry-leading security innovation. The server supports HPE iLO 7 for outstanding security and management capability.

HPE GreenLake

About the SPECpower_ssj 2008 benchmark

SPECpower_ssj 2008 is the first industry-standard SPEC benchmark that evaluates the power and performance characteristics of volume server class computers. It is used to compare power and performance among different servers and serves as a toolset for use in improving server efficiency. The benchmark is targeted for use by hardware vendors, IT industry, computer manufacturers, and governments. See the SPECpower_ssj 2008 webpage.

HPE ProLiant Compute Gen12—engineered for your hybrid world

HPE ProLiant Compute brings a new level of security, performance, and efficiency to IT operations. With the pressure to deploy AI applications and rethink virtualization strategies, IT needs advanced capabilities to maximize productivity and performance. With the addition of new Gen12 systems, HPE has a full, modern portfolio of hardware and software solutions that provide a secure foundation for the next generation of workloads, while increasing power efficiency and streamlining operations.

Secured

Deliver next-level security with built-in, industry-leading HPE iLO silicon root of trust, to safeguard every phase of the server lifecycle now and for the future—from manufacturing to end-of-life. Featuring the latest HPE iLO 7 with secure enclave, an embedded security processor within the HPE iLO ASIC, ensuring a highly controlled, tamper-resistant environment, especially important at the edge, and eliminates vulnerabilities associated with external EEPROM storage.

It is built on top of the HPE iLO silicon root of trust, a robust security foundation embedded within the server hardware, ensuring that every layer of firmware and software loads securely and is verified from the moment the server is powered, providing an unbreakable chain of trust, protecting servers against firmware attacks, unauthorized access, and tampering, thereby ensuring the highest level of data integrity and system reliability.

Optimized

The HPE ProLiant Compute portfolio is optimized for performance, efficiency and cost with tailored solutions to power workloads from VDI to AI. With ever-increasing power demands on data centers, purpose-built compute for AI, and superior cooling innovations deliver energy efficiency without compromising performance or productivity. To help organizations make informed choices from pre-order to deployment, on-demand carbon footprint reporting is available only from HPE to support your sustainability initiatives.

Automated

AI-driven productivity with proactive and predictive automation from data center to edge, leveraging a single management solution from HPE Compute Ops Management. Ensure smooth enterprise operations with proactive and predictive automation from data center to edge, leveraging a single management solution powered by AI-driven insights. Enable operators to react quicker and gain greater control, from forecasting energy costs to managing a global server footprint. Boost productivity of IT staff by quickly pinpointing problem areas through dashboards, intelligent alerts, and global map view of all servers with status and activity.

Bottom line

These benchmark world records are proof points for the excellent energy efficiency of the HPE ProLiant Compute DL380a Gen12 server. HPE continues to be on the cutting edge by designing products that stand the test of time with innovations that are ahead of their time.

Learn more at

HPE ProLiant Compute DL380a Gen12 server

HPE Server performance briefs

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