

Continuing Growth Through Advancements in AI Training Performance with MLCommons

Article

Lenovo AI is continuing momentum

Lenovo continues its investment in artificial intelligence (AI) to accelerate AI deployment for businesses around the world. Fueled by increased global digitalization and demand for IT infrastructure upgrades, Lenovo is simplifying the often-complex implementation of new AI capabilities by delivering AI to the source of data and harnessing its vast network of best-in-class partners to build next-generation turnkey solutions that enable computing intelligence directly at the edge. Read more in the [June 2023 Press Release](#).

MLPerf™ is the industry's leading AI benchmark and gives quantitative results to Lenovo's investment. As MLPerf Training v3.0 began our teams at Lenovo AI worked to improve upon our v2.0 results, but to also lead against any competitors. Lenovo achieved leadership results in several areas, showcasing our continued momentum to deliver smarter technology for all.

Lenovo will continue investing in standard AI and generative AI models, led by a team who strive to carry a customer and performance first approach. As enterprise needs change, Lenovo will remain a leading solution for customers with their comprehensive AI portfolio that carries more offerings than any of their competitors. With the importance remaining of process and performance improvement each MLPerf cycle.

MLPerf Training v3.0 Highlights

The key changes for MLPerf Training v3.0 include:

- Support for NVIDIA A100 GPUs on MLPerf Training v3.0 AI Benchmark
- Optimized Lenovo Servers for AI
 - Lenovo ThinkSystem SR670 V2 with 8x 80GB PCIe A100 GPUs
 - Lenovo ThinkSystem SR670 V2 with 4x 40GB SXM4 GPUs

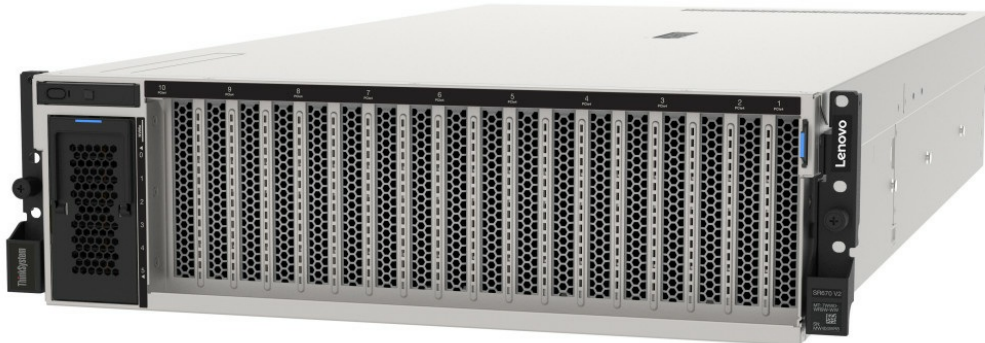


Figure 1. Lenovo ThinkSystem SR670 V2 supports up to eight double-wide GPUs

ThinkSystem SR670 V2 Power Driven Results

The SR670 V2 server delivers optimal performance for Artificial Intelligence (AI), High Performance Computing (HPC) and graphical workloads across an array of industries. Retail, manufacturing, financial services and healthcare industries can leverage the processing power of the GPUs in the SR670 V2 to extract greater insights and drive innovation utilizing machine learning (ML) and deep learning (DL).

Lenovo AI yet again set benchmarking standards within the MLPerf Training v3.0 results, improving and winning on three important categories.

- NVIDIA 4xA100-SXM4-40GB
 - Lenovo won ResNet with 62.0 minutes (Category Leader)
- NVIDIA 8xA100-PCIe-80GB
 - Lenovo won ResNet with 32.7 minutes (Category Leader)
 - Lenovo won R-CNN with 47.2 minutes (Category Leader)

Lenovo collaborates with NVIDIA

Lenovo demonstrated AI performance across various infrastructure configurations, running on Lenovo ThinkSystem platforms. We showcased the performance of our air-cooled systems, providing both PCIe and HGX deployment options in a standard data center platform that enterprises of all sizes can quickly deploy.

Lenovo collaborates extensively with NVIDIA in the AI realm. Through our Lenovo AI Discover Center of Excellence, we're working with NVIDIA to ensure the success of our mutual customers AI initiatives. This provides customers with access to Lenovo and NVIDIA AI experts to aid with consulting on projects, the proper infrastructure to run a proof of concept, and proof of ROI before deployment. As the AI world continues to evolve, collaborations make coming to market an easier and more effective process.

For more information

For more information, see the following resources:

Explore Lenovo AI solutions:

<https://www.lenovo.com/us/en/servers-storage/solutions/analytics-ai/>

Engage the Lenovo AI Center of Excellence:

<https://lenovoaicodelab.atlassian.net/servicedesk/customer/portal/3>

MLCommons®, the open engineering consortium and leading force behind MLPerf, has now released new results for MLPerf benchmark suites:

- Benchmark results: <https://mlcommons.org/en/inference-datacenter-21/>
- Latest news about MLCommons: <https://mlcommons.org/en/news/mlperf-inference-v21/>

Related product families

Product families related to this document are the following:

- [Artificial Intelligence](#)
- [ThinkSystem SR670 V2 Server](#)

Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service. Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.
8001 Development Drive
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk. Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2024. All rights reserved.

This document, LP1791, was created or updated on August 10, 2023.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
<https://lenovopress.lenovo.com/LP1791>
- Send your comments in an e-mail to:
comments@lenovopress.com

This document is available online at <https://lenovopress.lenovo.com/LP1791>.

Trademarks

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. A current list of Lenovo trademarks is available on the Web at <https://www.lenovo.com/us/en/legal/copytrade/>.

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo®

ThinkSystem®

Other company, product, or service names may be trademarks or service marks of others.