ThinkSystem V3 Servers with 4th Gen AMD EPYC Processors

Article

Lenovo offers a full line of ThinkSystem V3 and ThinkAgile VX V3 1-socket and 2-socket systems based on the new 4th Generation AMD EPYC 9004 high-performance processors.

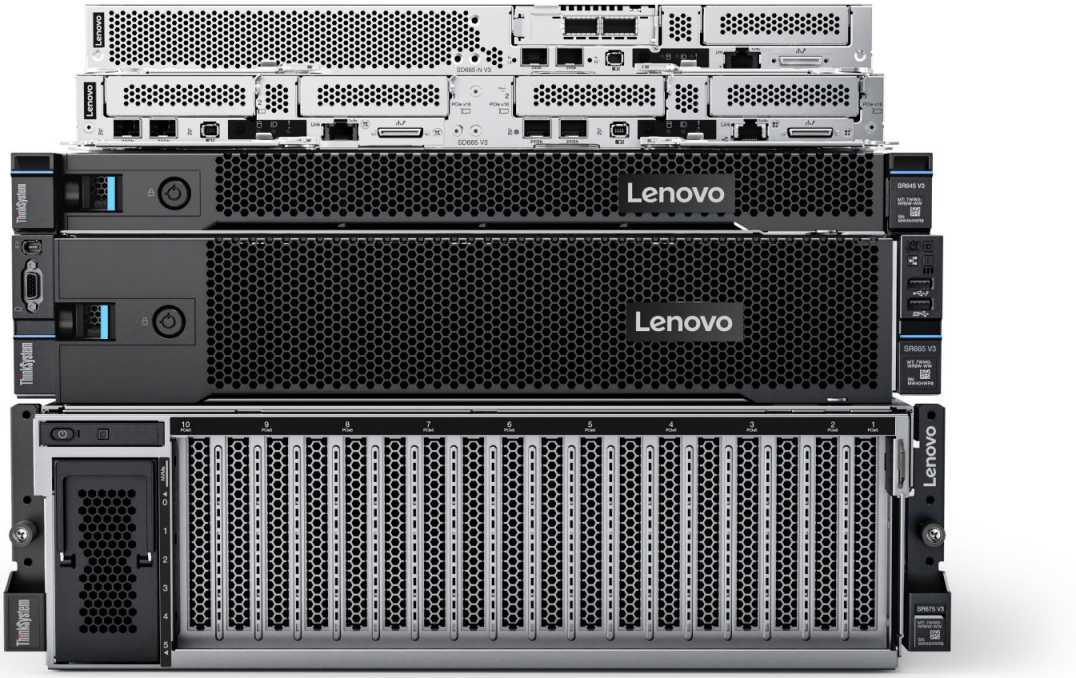

Figure 1. The family of ThinkSystem V3 servers with AMD processors

ThinkSystem V3 servers

The following systems have been announced:

- ThinkSystem SR635 V3
- ThinkSystem SR655 V3
- ThinkSystem SR645 V3
- ThinkSystem SR665 V3
- ThinkSystem SR675 V3
- ThinkSystem SD665 V3
- ThinkSystem SD665-N V3

New and updated references:

- Lenovo Servers and Storage Portfolio Guide
- Lenovo Server Comparison
- Introduction to DDR5 Memory

ThinkSystem SR635 V3

The Lenovo ThinkSystem SR635 V3 is a 1-socket 1U server that features the AMD EPYC 9004 "Genoa" family of processors. With up to 96 processor cores and support for the new PCIe 5.0 standard for I/O, the SR635 V3 offers the ultimate in one-socket server performance in a 1U form factor. The server is ideal for dense workloads that can take advantage of GPU processing and high-performance NVMe drives.

Figure 1. Lenovo ThinkSystem SR635 V3

Details about the SR635 V3:

- Datasheet
- Product Guide
- 3D Tour
- Product web page

ThinkSystem SR655 V3

The Lenovo ThinkSystem SR655 V3 is a 1-socket 2U server that features the AMD EPYC 9004 "Genoa" family of processors. With up to 96 cores per processor and support for the new PCIe 5.0 standard for I/O, the SR655 V3 offers the ultimate in one-socket server performance in a 2U form factor. The server is ideal for workloads that can take advantage of GPU processing using 6x double-wide GPUs.

Suggested uses: AI Inference, VDI, OLTP, Analytics, software-defined storage

Figure 1. Lenovo ThinkSystem SR655 V3

Details about the SR655 V3:

- Datasheet
- Product Guide
- 3D Tour
- Product web page

ThinkSystem SR645 V3

The Lenovo ThinkSystem SR645 V3 is a dense, high performance, 2-socket 1U rack server. It is suitable for small businesses to large enterprises, and especially cloud service providers. The server uses the new 4th Generation AMD EPYC™ processors and is designed to handle a wide range of workloads such as cloud computing, virtualization, VDI, enterprise applications, and database management.

Figure 2. Lenovo ThinkSystem SR645 V3

Details about the SR645 V3:

- Datasheet
- Product Guide
- 3D Tour
- Product web page

ThinkSystem SR665 V3

Lenovo ThinkSystem SR665 V3 is the optimum 2U, two-socket server. The SR665 V3 has the performance and flexibility to manage a complex set of workloads like data management, analytics, virtualization, cloud, and AI. The two 4th Gen AMD EPYC™ processors and the latest DDR5 memory maximize the performance of this 2U server.

Figure 3. Lenovo ThinkSystem SR665 V3

Details about the SR665 V3:

- Datasheet
- Product Guide
- 3D Tour
- Product web page

ThinkSystem SR675 V3

The ThinkSystem SR675 V3 is a modular 3U platform tailored to flexibly support your enterprise AI and other highly-accelerated technical computing workloads. It features a modular design for ultimate flexibility with six different front shuttle options. It utilizes the newest NVIDIA H100 GPUs, delivering a powerful enterprise-grade solution for deploying accelerated HPC and AI workloads.

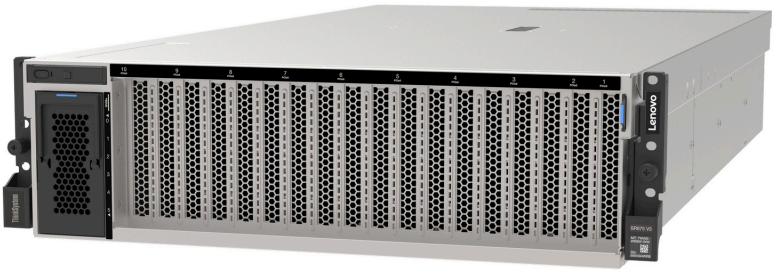

Figure 4. Lenovo SR675 V3 configured to support eight double-wide GPUs

Details about the SR675 V3:

- Datasheet
- Product Guide
- 3D Tour
- Product web page

ThinkSystem SD665 V3

The ThinkSystem SD665 V3 Neptune DWC node is the next-generation high-performance server based on the fifth generation Lenovo Neptune™ direct water cooling platform. With two fourth-generation AMD EPYC processors, the SD665 V3 node combines the latest AMD processors and Lenovo's market-leading water-cooling solution, which results in extreme performance in an extreme dense packaging, supporting your application from Exascale to Everyscale™.

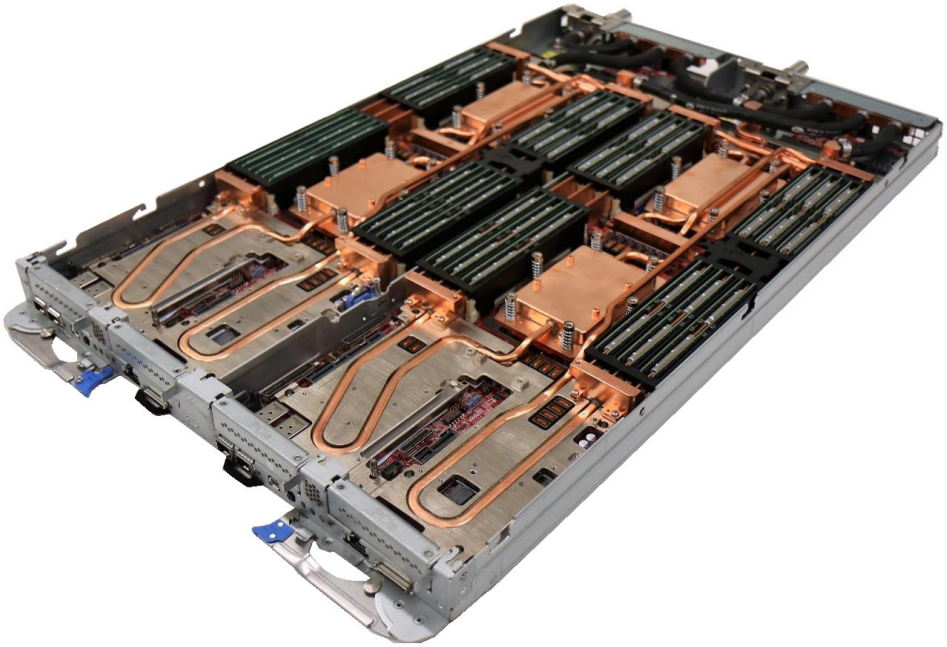

Figure 5. The ThinkSystem SD665 V3 server tray with two distinct two-socket nodes

Details about the SD665 V3:

- Datasheet
- Product Guide
- 3D Tour
- Product web page

ThinkSystem SD665-N V3

The ThinkSystem SD665-N V3 Neptune DWC node is the next-generation high-performance server based on the fifth generation Lenovo Neptune™ direct water cooling platform. With one or two fourth-generation AMD EPYC processors and four powerful NVIDIA H100 Tensor Core GPUs, the SD665-N V3 server features the latest technology from AMD and NVIDIA, combined with Lenovo's market-leading water-cooling solution, which results in extreme performance in an extreme dense packaging, supporting your application from Exascale to Everyscale™.

Figure 6. The ThinkSystem SD665-N V3 server tray with two processors and four NVIDIA GPUs

Details about the SD665 V3:

- Datasheet
- Product Guide
- 3D Tour
- Product web page

ThinkAgile V3 systems

The following ThinkAgile VX systems have been announced:

> **Tip**: The ThinkAgile HX systems with AMD EPYC 9004 are planned to be announced and orderable in March 2023.

ThinkAgile VX635 V3 Integrated System
ThinkAgile VX635 V3 Certified Node

ThinkAgile VX635 V3 are a set of 1-socket 1U systems that feature the AMD EPYC 9004 "Genoa" family of processors. These systems run VMware software and are designed to offers a unique, software-defined approach to hyper convergence, leveraging the hypervisor to deliver compute, storage and management in a tightly integrated software stack.

Figure 7. 1-socket ThinkAgile VX635 V3

Details about the ThinkAgile VX635 V3 systems

- Product Guide
- Datasheet (VX Series)
- 3D Tour (VX Series)
- Product web page (VX Series)

ThinkAgile VX655 V3 Integrated System
ThinkAgile VX655 V3 Certified Node

The ThinkAgile VX655 V3 are 1-socket 2U systems that feature the AMD EPYC 9004 "Genoa" family of processors. These systems run VMware software and are designed to offers a unique, software-defined approach to hyper convergence, leveraging the hypervisor to deliver compute, storage and management in a tightly integrated software stack.

Figure 8. 1-socket ThinkAgile VX655 V3

Details about the ThinkAgile VX655 V3 systems

- Product Guide
- Datasheet (VX Series)
- 3D Tour (VX Series)
- Product web page (VX Series)

ThinkAgile VX645 V3 Integrated System
ThinkAgile VX645 V3 Certified Node

ThinkAgile VX645 V3 are a set of 2-socket 1U systems that feature the AMD EPYC 9004 "Genoa" family of

processors. These systems run VMware software and are designed to offers a unique, software-defined approach to hyper convergence, leveraging the hypervisor to deliver compute, storage and management in a tightly integrated software stack.

Figure 9. 2-socket ThinkAgile VX645 V3

Details about the ThinkAgile VX645 V3 systems

- Product Guide
- Datasheet (VX Series)
- 3D Tour (VX Series)
- Product web page (VX Series)

ThinkAgile VX665 V3 Integrated System
ThinkAgile VX665 V3 Certified Node

The ThinkAgile VX665 V3 are 2-socket 2U systems that feature the AMD EPYC 9004 "Genoa" family of processors. These systems run VMware software and are designed to offers a unique, software-defined approach to hyper convergence, leveraging the hypervisor to deliver compute, storage and management in a tightly integrated software stack.

Figure 10. 2-socket ThinkAgile VX665 V3

Details about the ThinkAgile VX665 V3 systems

- Product Guide
- Datasheet (VX Series)
- 3D Tour (VX Series)
- Product web page (VX Series)

Benchmark results

The ThinkSystem SR665 V3 has achieved 24 #1 world record benchmark results across seven different industry benchmarks. Click the links to read about each benchmark and the results achieved.

- SPECjbb
- SPECcpu
- SPEC ACCEL OpenMP
- SPECompG
- SPEChpc 2021 Tiny
- SPEChpc 2021 Small
- SPECpower on Windows
- SPECpower on Linux

New server options

In addition to the new servers, we also announced the following options for our ThinkSystem servers. Click the links to view the product guides for the options.

New network adapters:

- ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port OCP Ethernet Adapter, 4XC7A80567
- ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port PCIe Ethernet Adapter, 4XC7A80566
- ThinkSystem Broadcom 57508 100GbE QSFP56 2-Port OCP Ethernet Adapter, 4XC7A08243
- ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port OCP Ethernet Adapter, 4XC7A80269
- ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter, 4XC7A80267
- ThinkSystem Intel X710-T2L 10GBase-T 2-Port PCIe Ethernet Adapter, 4XC7A80266
- ThinkSystem Intel X710-T4L 10GBase-T 4-Port OCP Ethernet Adapter, 4XC7A80268

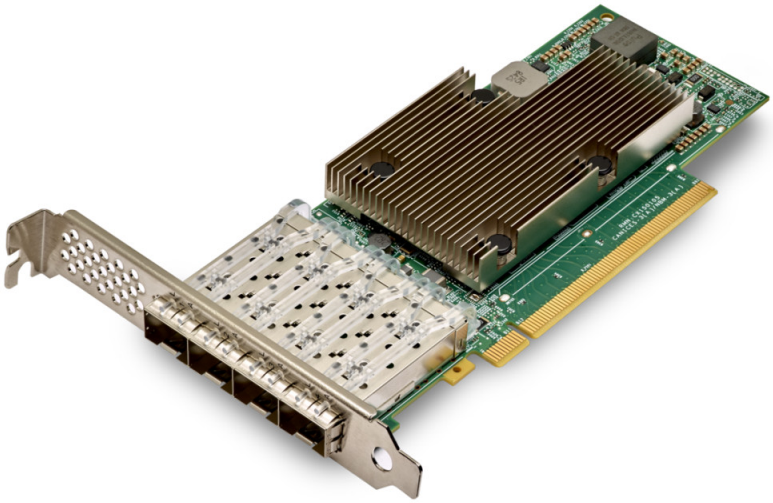

Figure 11. ThinkSystem Broadcom 57504 10/25GbE SFP28 4-Port PCIe Ethernet Adapter

New storage adapters:

- ThinkSystem 440-8e SAS/SATA PCIe Gen4 12Gb HBA, 4Y37A78837
- ThinkSystem RAID 5350-8i PCIe 12Gb Internal Adapter, 4Y37A84028

New GPUs:

- ThinkSystem NVIDIA RTX A2000 12GB PCIe Active GPU, 4X67A76720
- ThinkSystem NVIDIA RTX A4500 20GB PCIe Active GPU, 4X67A76726
- ThinkSystem NVIDIA H100 80GB PCIe Gen5 Passive GPU, 4X67A82257
- ThinkSystem NVIDIA H100 SXM5 700W 80G HBM3 GPU Board, BQQV

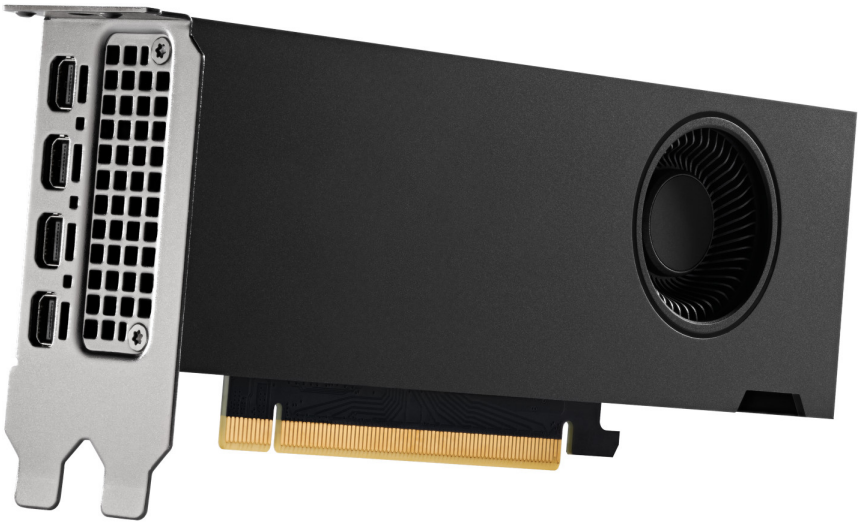

Figure 12. ThinkSystem NVIDIA RTX A2000 12GB PCIe Active GPU

New drive options:

- Solidigm P5520:
  - ThinkSystem 3.5" U.2 P5520 1.92TB Read Intensive NVMe PCIe 4.0 x4 SS SSD, 4XB7A79664
- Micron 5400 PRO:
  - ThinkSystem 7mm 5400 PRO 240GB Read Intensive SATA 6Gb HS SSD, 4XB7A82264
  - ThinkSystem 7mm 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD, 4XB7A82265
  - ThinkSystem 7mm 5400 PRO 960GB Read Intensive SATA 6Gb HS SSD, 4XB7A82266
  - ThinkSystem 7mm 5400 PRO 1.92TB Read Intensive SATA 6Gb HS SSD, 4XB7A82267
  - ThinkSystem 7mm 5400 PRO 3.84TB Read Intensive SATA 6Gb HS SSD, 4XB7A82268
  - ThinkSystem 7mm 5400 PRO 7.68TB Read Intensive SATA 6Gb HS SSD, 4XB7A82269
  - ThinkSystem ST50 V2 2.5" 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD, 4XB7A82273
  - ThinkSystem ST50 V2 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD, 4XB7A82274
  - ThinkSystem ST50 V2 2.5" 5400 PRO 960GB Read Intensive SATA 6Gb NHS SSD, 4XB7A82275
  - ThinkSystem ST50 V2 3.5" 5400 PRO 240GB Read Intensive SATA 6Gb NHS SSD, 4XB7A82276
  - ThinkSystem ST50 V2 3.5" 5400 PRO 480GB Read Intensive SATA 6Gb NHS SSD, 4XB7A82277
  - ThinkSystem ST50 V2 3.5" 5400 PRO 960GB Read Intensive SATA 6Gb NHS SSD, 4XB7A82278
  - ThinkSystem 2.5" 7mm 5400 PRO 240GB Read Intensive SATA 6Gb Trayless SSD, BS2X
  - ThinkSystem 2.5" 7mm 5400 PRO 480GB Read Intensive SATA 6Gb Trayless SSD, BS2W
  - ThinkSystem 2.5" 7mm 5400 PRO 960GB Read Intensive SATA 6Gb Trayless SSD, BS2V
  - ThinkSystem 2.5" 7mm 5400 PRO 1.92TB Read Intensive SATA 6Gb Trayless SSD, BS2U
  - ThinkSystem 2.5" 7mm 5400 PRO 3.84TB Read Intensive SATA 6Gb Trayless SSD, BS2T
  - ThinkSystem 2.5" 7mm 5400 PRO 7.68TB Read Intensive SATA 6Gb Trayless SSD, BS2S
- Micron 7450 MAX:
  - ThinkSystem M.2 7450 MAX 800GB Mixed Use NVMe PCIe 4.0 x4 NHS SSD, 4XB7A84603
- Micron 7450 PRO:
  - ThinkSystem M.2 7450 PRO 480GB Read Intensive NVMe PCIe 4.0 x4 NHS SSD, 4XB7A82636

- ThinkSystem M.2 7450 PRO 1.92TB Read Intensive Entry NVMe PCIe 4.0 x4 NHS SSD, 4XB7A14000
- ThinkSystem M.2 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 NHS SSD, 4XB7A84604
- ThinkSystem M.2 7450 PRO 3.84TB Read Intensive NVMe PCIe 4.0 x4 NHS SSD (with Heatsink), 4XB7A82852

Related product families

Product families related to this document are the following:

- ThinkSystem SD665 V3 Server
- ThinkSystem SD665-N V3 Server
- ThinkSystem SR635 V3 Server
- ThinkSystem SR645 V3 Server
- ThinkSystem SR655 V3 Server
- ThinkSystem SR665 V3 Server
- ThinkSystem SR675 V3 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 2026. All rights reserved.

This document, LP1665, was created or updated on February 21, 2023.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
  https://lenovopress.lenovo.com/LP1665
- Send your comments in an e-mail to:
  comments@lenovopress.com

This document is available online at https://lenovopress.lenovo.com/LP1665.

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®
from Exascale to Everyscale®
Neptune®
ThinkAgile®
ThinkSystem®

The following terms are trademarks of other companies:

AMD®, AMD EPYC®, and EPYC® are trademarks of Advanced Micro Devices, Inc.

Intel®, the Intel logo is a trademark of Intel Corporation or its subsidiaries.

Linux® is the trademark of Linus Torvalds in the U.S. and other countries.

Windows® is a trademark of Microsoft Corporation in the United States, other countries, or both.

SPEC®, SPEC ACCEL®, SPEChpc™, SPECjbb®, and SPECpower® are trademarks of the Standard Performance Evaluation Corporation (SPEC).

NVIDIA® and NVIDIA RTX® are trademarks of NVIDIA Corporation.

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