



SPEChpc™ 2021 Tiny Result

Copyright 2021-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPEChpc 2021_tny_base = 79.9

SPEChpc 2021_tny_peak = 80.4

ThinkSystem SR675 V3 (AMD EPYC 9654, Nvidia H100-PCIe-80G)

hpc2021 License: 28

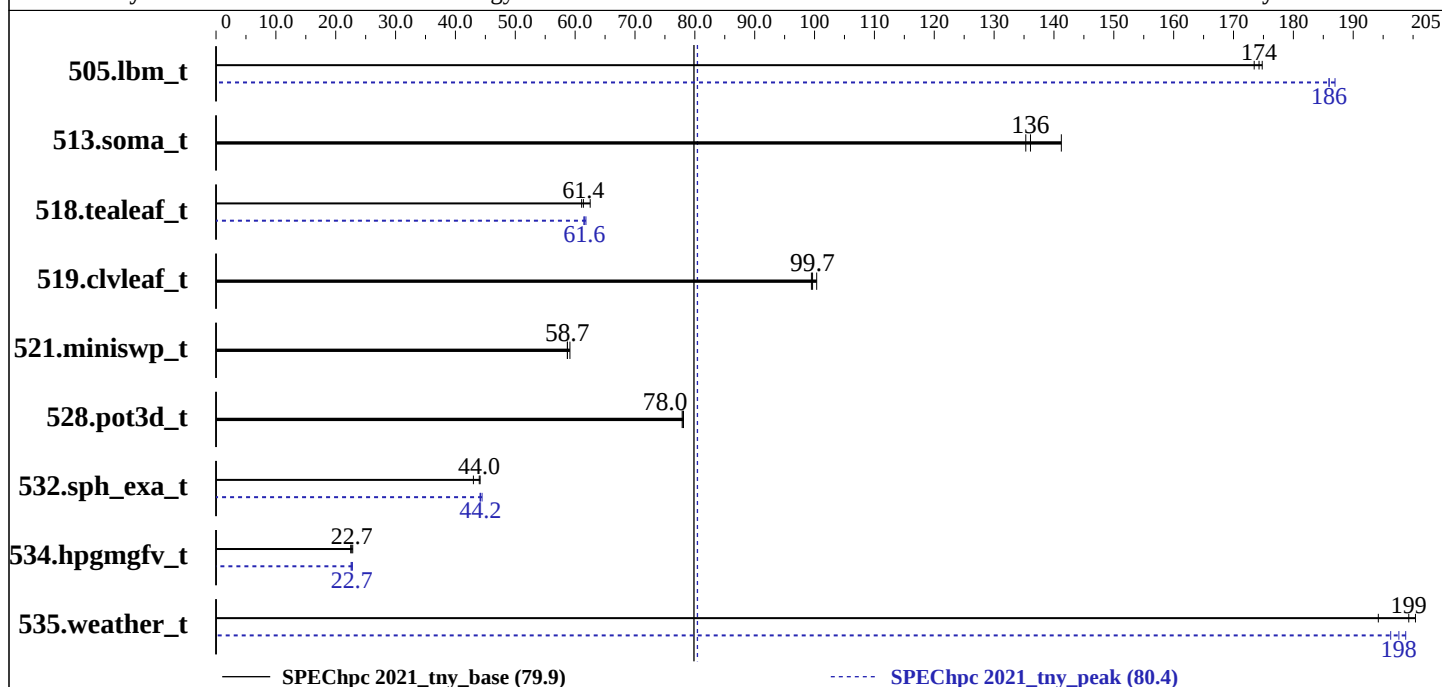
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2023

Hardware Availability: Oct-2023

Software Availability: Oct-2023



Results Table

Benchmark	Base								Peak							
	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio
505.lbm_t	ACC	8	1	13.0	173	<u>12.9</u>	<u>174</u>	12.9	175	ACC	8	1	<u>12.1</u>	<u>186</u>	12.0	187
513.soma_t	ACC	8	1	27.3	135	<u>27.2</u>	<u>136</u>	26.2	141	ACC	8	1	27.3	135	<u>27.2</u>	<u>136</u>
518.tealeaf_t	ACC	8	1	<u>26.9</u>	<u>61.4</u>	26.4	62.5	27.0	61.1	ACC	8	1	26.8	61.5	<u>26.8</u>	<u>61.6</u>
519.clvleaf_t	ACC	8	1	<u>16.6</u>	<u>99.7</u>	16.6	99.5	16.4	100	ACC	8	1	<u>16.6</u>	<u>99.7</u>	16.6	99.5
521.miniswp_t	ACC	8	1	27.1	59.1	27.3	58.7	<u>27.3</u>	<u>58.7</u>	ACC	8	1	27.1	59.1	27.3	58.7
528.pot3d_t	ACC	8	1	27.3	77.9	27.2	78.1	<u>27.2</u>	<u>78.0</u>	ACC	8	1	27.3	77.9	27.2	78.1
532.sph_exa_t	ACC	8	1	<u>44.3</u>	<u>44.0</u>	45.3	43.0	44.2	44.1	ACC	8	1	44.2	44.1	43.9	44.4
534.hpgmgfv_t	ACC	8	1	<u>51.8</u>	<u>22.7</u>	51.4	22.8	52.2	22.5	ACC	8	1	51.6	22.8	<u>51.8</u>	<u>22.7</u>
535.weather_t	ACC	8	1	16.6	194	16.1	200	<u>16.2</u>	<u>199</u>	ACC	8	1	<u>16.3</u>	<u>198</u>	16.4	196

SPEChpc 2021_tny_base = 79.9

SPEChpc 2021_tny_peak = 80.4

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.



SPEChpc™ 2021 Tiny Result

Copyright 2021-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPEChpc 2021_tny_base = 79.9

SPEChpc 2021_tny_peak = 80.4

ThinkSystem SR675 V3 (AMD EPYC 9654, Nvidia H100-PCIe-80G)

hpc2021 License: 28

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2023

Hardware Availability: Oct-2023

Software Availability: Oct-2023

Hardware Summary

Type of System: Homogeneous Cluster
Compute Node: ThinkSystem SR675 V3
Compute Nodes Used: 1
Total Chips: 2
Total Cores: 192
Total Threads: 192
Total Memory: 768 GB
Total Accelerators: 8
Max. Peak Threads: 1

Software Summary

Compiler: Nvidia HPC SDK 23.5
MPI Library: Open MPI 4.0.5
Other MPI Info: None
Other Software: --
Base Parallel Model: ACC
Base Ranks Run: 8
Base Threads Run: 1
Peak Parallel Models: ACC
Minimum Peak Ranks: 8
Maximum Peak Ranks: 8
Max. Peak Threads: 1
Min. Peak Threads: 1

Node Description: ThinkSystem SR675 V3

Hardware

Number of nodes: 1
Uses of the node: compute
Vendor: Lenovo Global Technology
Model: ThinkSystem SR655 V3
CPU Name: AMD EPYC 9654
CPU(s) orderable: 1 chips
Chips enabled: 2
Cores enabled: 192
Cores per chip: 96
Threads per core: 1
CPU Characteristics: Intel Turbo Boost Technology up to 3.7 GHz
CPU MHz: 2400
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 384 MB I+D on chip per chip
Other Cache: None
Memory: 768 GB (24 x 32 GB 2Rx8 PC5-4800B-R)
Disk Subsystem: 1x ThinkSystem 2.5" 5300 480GB SSD
Other Hardware: None
Accel Count: 8
Accel Model: Tesla H100 PCIe 80GB
Accel Vendor: Nvidia Corporation
Accel Type: GPU
Accel Connection: PCIe Gen5 x16
Accel ECC enabled: Yes
Accel Description: Nvidia Tesla H100 PCIe 80GB
Adapter: Mellanox ConnectX-7 NDR
Number of Adapters: 1
Slot Type: PCI-Express 5.0 x8
Data Rate: 400 Gb/s
Ports Used: 1
Interconnect Type: Nvidia Mellanox ConnectX-7 NDR

Software

Accelerator Driver: 535.54.03
Adapter: Mellanox ConnectX-7 NDR
Adapter Driver: 5.9-0.5.5
Adapter Firmware: 28.33.0508
Operating System: Red Hat Enterprise Linux Server release 8.6,
Kernel 4.18.0-372.9.1.el8.x86_64
Local File System: xfs
Shared File System: XFS
System State: Multi-user, run level 3
Other Software: None



SPEChpc™ 2021 Tiny Result

Copyright 2021-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPEChpc 2021_tny_base = 79.9

SPEChpc 2021_tny_peak = 80.4

ThinkSystem SR675 V3 (AMD EPYC 9654, Nvidia H100-PCIe-80G)

hpc2021 License: 28

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2023

Hardware Availability: Oct-2023

Software Availability: Oct-2023

Submit Notes

The config file option 'submit' was used.

Compiler Version Notes

```
=====
CC  505.lbm_t(base, peak) 513.soma_t(base, peak) 518.tealeaf_t(base, peak)
    521.miniswp_t(base, peak) 534.hpgmgfv_t(base, peak)
-----
```

nvc 23.5-0 64-bit target on x86-64 Linux -tp zen3

NVIDIA Compilers and Tools

Copyright (c) 2022, NVIDIA CORPORATION & AFFILIATES. All rights reserved.

```
=====
CXXC 532.sph_exa_t(base, peak)
-----
```

nvc++ 23.5-0 64-bit target on x86-64 Linux -tp zen3

NVIDIA Compilers and Tools

Copyright (c) 2022, NVIDIA CORPORATION & AFFILIATES. All rights reserved.

```
=====
FC  519.clvleaf_t(base, peak) 528.pot3d_t(base, peak) 535.weather_t(base,
    peak)
-----
```

nvfortran 23.5-0 64-bit target on x86-64 Linux -tp zen3

NVIDIA Compilers and Tools

Copyright (c) 2022, NVIDIA CORPORATION & AFFILIATES. All rights reserved.

Base Compiler Invocation

C benchmarks:

mpicc

C++ benchmarks:

mpicxx

Fortran benchmarks:

mpif90



SPEChpc™ 2021 Tiny Result

Copyright 2021-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPEChpc 2021_tny_base = 79.9

SPEChpc 2021_tny_peak = 80.4

ThinkSystem SR675 V3 (AMD EPYC 9654, Nvidia H100-PCIe-80G)

hpc2021 License: 28

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2023

Hardware Availability: Oct-2023

Software Availability: Oct-2023

Base Portability Flags

505.lbm_t: -DSPEC_OPENACC_NO_SELF

532.sph_exa_t: -c++17

Base Optimization Flags

C benchmarks:

-Mfprelaxed -Mnuniform -Mstack_arrays -fast -acc=gpu -Minfo=accel
-DSPEC_ACCEL_AWARE_MPI

C++ benchmarks:

-Mfprelaxed -Mnuniform -Mstack_arrays -fast -acc=gpu -Minfo=accel
-DSPEC_ACCEL_AWARE_MPI

Fortran benchmarks:

-DSPEC_ACCEL_AWARE_MPI -Mfprelaxed -Mnuniform -Mstack_arrays -fast
-acc=gpu -Minfo=accel

Base Other Flags

C benchmarks (except as noted below):

-Ispecmpitime -w

521.miniswp_t: -Ispecmpitime/ -w

534.hpgmgfv_t: -Ispecmpitime -w

C++ benchmarks:

-Ispecmpitime -w

Fortran benchmarks (except as noted below):

-w

519.clvleaf_t: -Ispecmpitime -w

Peak Compiler Invocation

C benchmarks:

mpicc

(Continued on next page)



SPEChpc™ 2021 Tiny Result

Copyright 2021-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPEChpc 2021_tny_base = 79.9

SPEChpc 2021_tny_peak = 80.4

ThinkSystem SR675 V3 (AMD EPYC 9654, Nvidia H100-PCIe-80G)

hpc2021 License: 28

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2023

Hardware Availability: Oct-2023

Software Availability: Oct-2023

Peak Compiler Invocation (Continued)

C++ benchmarks:

mpicxx

Fortran benchmarks:

mpif90

Peak Portability Flags

505.lbm_t: -DSPEC_OPENACC_NO_SELF

Peak Optimization Flags

C benchmarks:

505.lbm_t: -fast -acc=gpu -O3 -Mfprelaxed -Mnuniform
-DSPEC_ACCEL_AWARE_MPI

513.soma_t: basepeak = yes

518.tealeaf_t: -fast -acc=gpu -Msafeptr -DSPEC_ACCEL_AWARE_MPI

521.miniswp_t: basepeak = yes

534.hpgmgfv_t: -fast -acc=gpu -static-nvidia -DSPEC_ACCEL_AWARE_MPI

C++ benchmarks:

-fast -acc=gpu -O3 -Mfprelaxed -Mnuniform -Mstack_arrays
-static-nvidia -DSPEC_ACCEL_AWARE_MPI

Fortran benchmarks:

519.clvleaf_t: basepeak = yes

528.pot3d_t: basepeak = yes

535.weather_t: -DSPEC_ACCEL_AWARE_MPI -fast -acc=gpu -O3 -Mfprelaxed
-Mnuniform -Mstack_arrays -static-nvidia



SPEChpc™ 2021 Tiny Result

Copyright 2021-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPEChpc 2021_tny_base = 79.9

SPEChpc 2021_tny_peak = 80.4

ThinkSystem SR675 V3 (AMD EPYC 9654, Nvidia H100-PCIe-80G)

hpc2021 License: 28

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2023

Hardware Availability: Oct-2023

Software Availability: Oct-2023

Peak Other Flags

C benchmarks (except as noted below):

-Ispecmpitime -w

521.miniswp_t: -Ispecmpitime/ -w

534.hpgmgfv_t: -Ispecmpitime -w

C++ benchmarks:

-Ispecmpitime -w

Fortran benchmarks (except as noted below):

-w

519.clvleaf_t: -Ispecmpitime -w

The flags file that was used to format this result can be browsed at

http://www.spec.org/hpc2021/flags/nv2021_flags_v1.0.3.2022-08-24.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/hpc2021/flags/nv2021_flags_v1.0.3.2022-08-24.xml

SPEChpc is a trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEChpc2021 v1.1.7 on 2023-08-04 14:13:05-0400.

Report generated on 2025-06-06 13:12:25 by hpc2021 PDF formatter v112.

Originally published on 2023-10-18.