



SPEChpc™ 2021 Small Result

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Lenovo Global Technology
ThinkSystem SC777 V4(Arm Neoverse V2, Nvidia GB200)

SPEChpc 2021_sml_base = 12.1

SPEChpc 2021_sml_peak = 12.1

hpc2021 License: 28

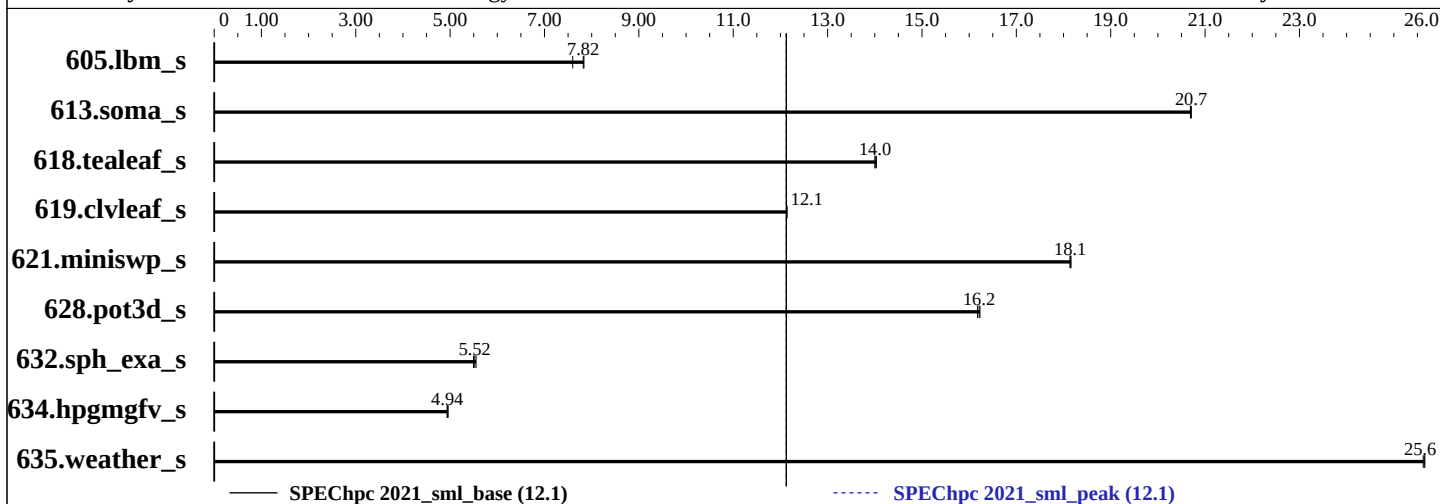
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: May-2026

Hardware Availability: Oct-2026

Software Availability: Oct-2026



Results Table

Benchmark	Base								Peak							
	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Model	Ranks	Thrds/Rnk	Seconds	Ratio	Seconds	Ratio
605.lbm_s	ACC	4	1	204	7.60	198	7.82	198	7.84	ACC	4	1	204	7.60	198	7.82
613.soma_s	ACC	4	1	77.3	20.7	77.3	20.7	77.3	20.7	ACC	4	1	77.3	20.7	77.3	20.7
618.tealeaf_s	ACC	4	1	146	14.0	146	14.0	146	14.0	ACC	4	1	146	14.0	146	14.0
619.clvleaf_s	ACC	4	1	136	12.1	136	12.1	136	12.1	ACC	4	1	136	12.1	136	12.1
621.miniswp_s	ACC	4	1	60.6	18.2	60.6	18.1	60.6	18.1	ACC	4	1	60.6	18.2	60.6	18.1
628.pot3d_s	ACC	4	1	103	16.2	104	16.2	103	16.2	ACC	4	1	103	16.2	104	16.2
632.sph_exa_s	ACC	4	1	417	5.52	419	5.49	414	5.55	ACC	4	1	417	5.52	419	5.49
634.hpgmgfv_s	ACC	4	1	197	4.94	197	4.96	197	4.94	ACC	4	1	197	4.94	197	4.96
635.weather_s	ACC	4	1	101	25.6	101	25.7	101	25.6	ACC	4	1	101	25.6	101	25.7

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



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Hardware Summary

Type of System: Homogeneous Cluster
Compute Node: ThinkSystem SC777 V4
Compute Nodes Used: 1
Total Chips: 2
Total Cores: 144
Total Threads: 144
Total Memory: 960 GB
Total Accelerators: 4
Max. Peak Threads: 1

Software Summary

Compiler: NVIDIA HPC SDK 25.11
MPI Library: Open MPI 4.1.9a1
Other MPI Info: None
Other Software: --
Base Parallel Model: ACC
Base Ranks Run: 4
Base Threads Run: 1
Peak Parallel Models: ACC
Minimum Peak Ranks: 4
Maximum Peak Ranks: 4
Max. Peak Threads: 1
Min. Peak Threads: 1

Node Description: ThinkSystem SC777 V4

Hardware

Number of nodes: 1
Uses of the node: compute
Vendor: Lenovo Global Technology
Model: ThinkSystem SC777 V4
CPU Name: NVIDIA Grace Neoverse V2 CPU
CPU(s) orderable: 2 chips
Chips enabled: 2
Cores enabled: 144
Cores per chip: 72
Threads per core: 1
CPU Characteristics: Grace CPU @3.3GHz
CPU MHz: 3300
Primary Cache: 64 KB I + 64 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 117 MB I+D on chip per chip
Other Cache: None
Memory: 960 GB (2x 480 GB LPDDR5X)
Disk Subsystem: 1x ThinkSystem 2.5" 5300 480GB SSD
Other Hardware: None
Accel Count: 4
Accel Model: NVIDIA GB200
Accel Vendor: NVIDIA Corporation
Accel Type: GPU
Accel Connection: NVLink-C2C
Accel ECC enabled: Yes
Accel Description: NVIDIA Grace Blackwell GB200
Adapter: N/A
Number of Adapters: 1
Slot Type: N/A
Data Rate: N/A
Ports Used: 0
Interconnect Type: N/A

Software

Accelerator Driver: 610.43.02
Adapter: N/A
Adapter Driver: N/A
Adapter Firmware: N/A
Operating System: Ubuntu 24.04.4 LTS,
Kernel 6.17.0-1018-nvidia-64k
Local File System: xfs
Shared File System: XFS
System State: Multi-user, run level 3
Other Software: None



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Submit Notes

The config file option 'submit' was used.

General Notes

Environment variables set by runhpc before the start of the run:

UCX_MEMTYPE_CACHE = "n"
UCX_NET_DEVICES = "all"
UCX_TLS = "self,sm,cuda_copy,tcp"

Compiler Version Notes

=====
CC 605.lbm_s(base) 613.soma_s(base) 618.tealeaf_s(base) 621.miniswp_s(base)
634.hpgmgfv_s(base)
=====

nvc 25.11-0 linuxarm64 target on aarch64 Linux -tp neoverse-v2
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=====
CXXC 632.sph_exa_s(base)
=====

nvc++ 25.11-0 linuxarm64 target on aarch64 Linux -tp neoverse-v2
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=====
FC 619.clvleaf_s(base) 628.pot3d_s(base) 635.weather_s(base)
=====

nvfortran 25.11-0 linuxarm64 target on aarch64 Linux -tp neoverse-v2
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Base Compiler Invocation

C benchmarks:
mpicc

C++ benchmarks:
mpicxx

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Base Compiler Invocation (Continued)

Fortran benchmarks:
mpif90

Base Portability Flags

605.lbm_s: -DSPEC_OPENACC_NO_SELF
632.sph_exa_s: --c++17

Base Optimization Flags

C benchmarks:
-O4 -DSPEC_ACCEL_AWARE_MPI -acc=gpu -gpu=ccnative -Mfprelaxed
-Mnouniform -tp=host

C++ benchmarks:
-O4 -DSPEC_ACCEL_AWARE_MPI -acc=gpu -gpu=ccnative -Mfprelaxed
-Mnouniform -tp=host

Fortran benchmarks:
-DSPEC_ACCEL_AWARE_MPI -O4 -acc=gpu -gpu=ccnative -Mfprelaxed
-Mnouniform -tp=host

Base Other Flags

C benchmarks:
-Ispecmpitime -w

C++ benchmarks:
-Ispecmpitime -w

Fortran benchmarks (except as noted below):
-w

619.clvleaf_s: -Ispecmpitime -w



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Peak Optimization Flags

C benchmarks:

605.lbm_s: basepeak = yes
613.soma_s: basepeak = yes
618.tealeaf_s: basepeak = yes
621.miniswp_s: basepeak = yes
634.hpghmgfv_s: basepeak = yes

C++ benchmarks:

632.sph_exa_s: basepeak = yes

Fortran benchmarks:

619.clvleaf_s: basepeak = yes
628.pot3d_s: basepeak = yes
635.weather_s: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/hpc2021/flags/nv2021_flags_v1.0.3.2026-09-16.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/hpc2021/flags/nv2021_flags_v1.0.3.2026-09-16.xml

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

Tested with SPEChpc2021 v1.1.10 on 2026-05-11 22:36:58-0400.
Report generated on 2026-09-16 20:54:58 by hpc2021 PDF formatter v112.
Originally published on 2026-09-16.