SPEChpc™ 2021 Small Result

Copyright 2021-2026 Standard Performance Evaluation Corporation

Lenovo Global Technology

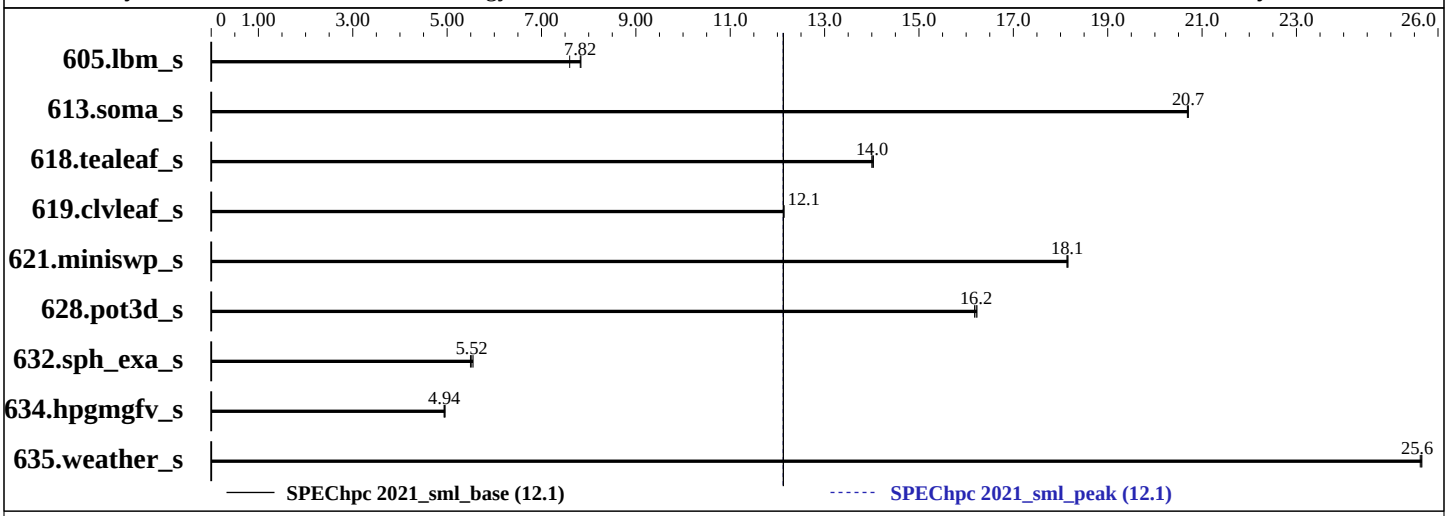
ThinkSystem SC777 V4(Arm Neoverse V2, Nvidia GB200)

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	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**	198	7.84
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	**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**	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	**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**	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	103	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	414	5.55
634.hpgmgfv_s	ACC	4	1	197	4.94	197	4.96	**197**	**4.94**	ACC	4	1	197	4.94	197	4.96	**197**	**4.94**
635.weather_s	ACC	4	1	**101**	**25.6**	101	25.7	101	25.6	ACC	4	1	**101**	**25.6**	101	25.7	101	25.6

SPEChpc 2021_sml_base = 12.1

SPEChpc 2021_sml_peak = 12.1

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

SPEChpc™ 2021 Small Result

Copyright 2021-2026 Standard Performance Evaluation Corporation

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

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

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
NVIDIA Compilers and Tools
Copyright (c) 2025, NVIDIA CORPORATION & AFFILIATES.  All rights reserved.
------------------------------------------------------------------------------

==============================================================================
 CXXC 632.sph_exa_s(base)
------------------------------------------------------------------------------
nvc++ 25.11-0 linuxarm64 target on aarch64 Linux -tp neoverse-v2
NVIDIA Compilers and Tools
Copyright (c) 2025, NVIDIA CORPORATION & AFFILIATES.  All rights reserved.
------------------------------------------------------------------------------

==============================================================================
 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
NVIDIA Compilers and Tools
Copyright (c) 2025, NVIDIA CORPORATION & AFFILIATES.  All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
mpicc

C++ benchmarks:
mpicxx

(Continued on next page)

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

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.hpgmgfv_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`

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 v1.1.10 on 2026-05-11 22:36:58-0400.
Report generated on 2026-09-16 20:54:59 by hpc2021 PS formatter v112.
Originally published on 2026-09-16.