



# SPEChpc™ 2021 Small Result

Copyright 2021-2024 Standard Performance Evaluation Corporation

## Supermicro

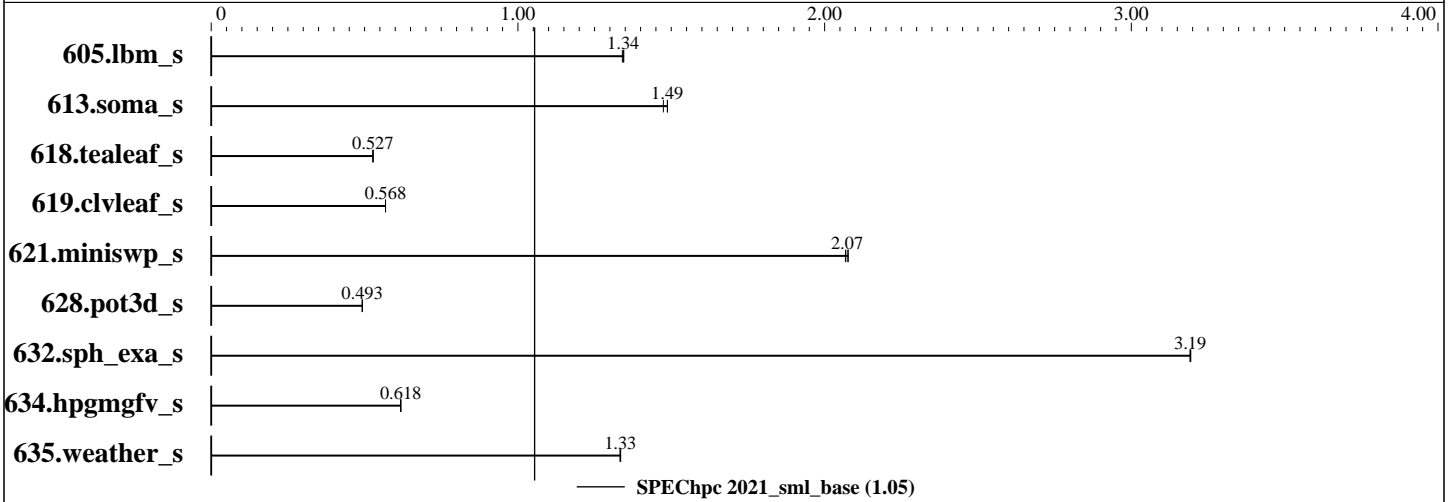
GPU SuperServer SYS-741GE-TNRT (Intel Xeon Platinum 8592+)

SPEChpc 2021\_sml\_base = 1.05

SPEChpc 2021\_sml\_peak = Not Run

hpc2021 License: 6569  
Test Sponsor: Supermicro  
Tested by: Supermicro

Test Date: Dec-2023  
Hardware Availability: Dec-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	Seconds	Ratio	
605.lbm_s	MPI	256	1	1156	1.34	1152	1.35	<b>1154</b>	<b>1.34</b>										
613.soma_s	MPI	256	1	<b>1076</b>	<b>1.49</b>	1085	1.47	1076	1.49										
618.tealeaf_s	MPI	256	1	3887	0.527	<b>3886</b>	<b>0.527</b>	3885	0.528										
619.clvleaf_s	MPI	256	1	<b>2903</b>	<b>0.568</b>	2903	0.568	2904	0.568										
621.miniswp_s	MPI	256	1	<b>530</b>	<b>2.07</b>	530	2.08	532	2.07										
628.pot3d_s	MPI	256	1	3401	0.492	3397	0.493	<b>3400</b>	<b>0.493</b>										
632.sph_exa_s	MPI	256	1	721	3.19	<b>720</b>	<b>3.19</b>	720	3.19										
634.hpgmgfv_s	MPI	256	1	1580	0.617	<b>1577</b>	<b>0.618</b>	1576	0.618										
635.weather_s	MPI	256	1	1951	1.33	<b>1949</b>	<b>1.33</b>	1947	1.34										

SPEChpc 2021\_sml\_base = 1.05

SPEChpc 2021\_sml\_peak = Not Run

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



# SPEChpc™ 2021 Small Result

Copyright 2021-2024 Standard Performance Evaluation Corporation

## Supermicro

GPU SuperServer SYS-741GE-TNRT (Intel Xeon Platinum 8592+)

SPEChpc 2021\_sml\_base = 1.05

SPEChpc 2021\_sml\_peak = Not Run

**hpc2021 License:** 6569  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro

**Test Date:** Dec-2023  
**Hardware Availability:** Dec-2023  
**Software Availability:** Oct-2023

### Hardware Summary

Type of System: Homogenous  
Compute Node: GPU SuperServer SYS-741GE-TNRT  
Interconnect: None  
Compute Nodes Used: 1  
Total Chips: 2  
Total Cores: 128  
Total Threads: 256  
Total Memory: 1 TB  
Max. Peak Threads: --

### Software Summary

Compiler: C/C++/Fortran: Version 2024.0.0 of Intel oneAPI Compiler  
MPI Library: Intel MPI Library for Linux\* OS, Version 2021.11 Build 20231005  
Other MPI Info: None  
Other Software: None  
Base Parallel Model: MPI  
Base Ranks Run: 256  
Base Threads Run: 1  
Peak Parallel Models: Not Run  
Minimum Peak Ranks: --  
Maximum Peak Ranks: --  
Max. Peak Threads: --  
Min. Peak Threads: --

### Node Description: GPU SuperServer SYS-741GE-TNRT

#### Hardware

Number of nodes: 1  
Uses of the node: compute  
Vendor: Supermicro  
Model: GPU SuperServer SYS-741GE-TNRT  
CPU Name: Intel Xeon Platinum 8592+  
CPU(s) orderable: 2 chips  
Chips enabled: 2  
Cores enabled: 128  
Cores per chip: 64  
Threads per core: 2  
CPU Characteristics: Intel Turbo Boost Technology up to 3.9 GHz  
CPU MHz: 1900  
Primary Cache: 32 KB I + 48 KB D on chip per core  
Secondary Cache: 2 MB I+D on chip per core  
L3 Cache: 320 MB I+D on chip per chip  
Other Cache: None  
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-5600B-R)  
Disk Subsystem: 1 x 512 GB M.2 NVMe SSD  
Other Hardware: None  
Accel Count: 0  
Accel Model: None  
Accel Vendor: None  
Accel Type: None  
Accel Connection: None  
Accel ECC enabled: None  
Accel Description: None  
Adapter: None  
Number of Adapters: 0  
Slot Type: None  
Data Rate: None

(Continued on next page)

#### Software

Accelerator Driver: --  
Adapter: None  
Adapter Driver: None  
Adapter Firmware: None  
Operating System: SUSE Linux Enterprise Server 15 SP5 Kernel 5.14.21-150500.53-default  
Local File System: xfs  
Shared File System: None  
System State: Multi-user, run level 3  
Other Software: None



# SPEChpc™ 2021 Small Result

Copyright 2021-2024 Standard Performance Evaluation Corporation

## Supermicro

GPU SuperServer SYS-741GE-TNRT (Intel Xeon Platinum 8592+)

SPEChpc 2021\_sml\_base = 1.05

SPEChpc 2021\_sml\_peak = Not Run

**hpc2021 License:** 6569  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro

**Test Date:** Dec-2023  
**Hardware Availability:** Dec-2023  
**Software Availability:** Oct-2023

### Node Description: GPU SuperServer SYS-741GE-TNRT

#### Hardware (Continued)

Ports Used: 0  
Interconnect Type: None

### Interconnect Description: None

#### Hardware

Vendor: None  
Model: None  
Switch Model: None  
Number of Switches: 0  
Number of Ports: 0  
Data Rate: None  
Firmware: None  
Topology: None  
Primary Use: None

#### Software

: --

### Submit Notes

The config file option 'submit' was used.

### General Notes

MPI startup command:  
mpirun command (mpiexec.hydra) was used to start MPI jobs.

### Compiler Version Notes

=====  
CXXC 632.sph\_exa\_s(base)  
-----

Intel(R) oneAPI DPC++/C++ Compiler 2024.0.0 (2024.0.0.20231017)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/intel/oneapi/compiler/2024.0/bin/compiler  
Configuration file: /opt/intel/oneapi/compiler/2024.0/bin/compiler/./icpx.cfg  
-----

=====  
CC 605.lbm\_s(base) 613.soma\_s(base) 618.tealeaf\_s(base) 621.miniswp\_s(base)  
634.hpgmgfv\_s(base)  
-----

Intel(R) oneAPI DPC++/C++ Compiler 2024.0.0 (2024.0.0.20231017)

(Continued on next page)



# SPEChpc™ 2021 Small Result

Copyright 2021-2024 Standard Performance Evaluation Corporation

## Supermicro

GPU SuperServer SYS-741GE-TNRT (Intel Xeon Platinum 8592+)

SPEChpc 2021\_sml\_base = 1.05

SPEChpc 2021\_sml\_peak = Not Run

**hpc2021 License:** 6569  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro

**Test Date:** Dec-2023  
**Hardware Availability:** Dec-2023  
**Software Availability:** Oct-2023

### Compiler Version Notes (Continued)

Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/intel/oneapi/compiler/2024.0/bin/compiler  
Configuration file: /opt/intel/oneapi/compiler/2024.0/bin/compiler/./icx.cfg

=====  
FC 619.clvleaf\_s(base) 635.weather\_s(base)  
=====

ifx (IFX) 2024.0.0 20231017  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

=====  
FC 628.pot3d\_s(base)  
=====

ifx: command line warning #10157: ignoring option '-W'; argument is of wrong type  
ifx (IFX) 2024.0.0 20231017  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

### Base Compiler Invocation

C benchmarks:  
mpiicc -cc=icx  
  
C++ benchmarks:  
mpiicpc -cxx=icpx  
  
Fortran benchmarks:  
mpiifort -fc=ifx

### Base Portability Flags

605.lbm\_s: -lstdc++  
613.soma\_s: -lstdc++  
618.tealeaf\_s: -lstdc++  
619.clvleaf\_s: -lstdc++  
621.miniswp\_s: -lstdc++  
628.pot3d\_s: -lstdc++  
632.sph\_exa\_s: -lstdc++  
634.hpgmgfv\_s: -lstdc++

(Continued on next page)



# SPEChpc™ 2021 Small Result

Copyright 2021-2024 Standard Performance Evaluation Corporation

## Supermicro

GPU SuperServer SYS-741GE-TNRT (Intel Xeon Platinum 8592+)

SPEChpc 2021\_sml\_base = 1.05

SPEChpc 2021\_sml\_peak = Not Run

**hpc2021 License:** 6569  
**Test Sponsor:** Supermicro  
**Tested by:** Supermicro

**Test Date:** Dec-2023  
**Hardware Availability:** Dec-2023  
**Software Availability:** Oct-2023

## Base Portability Flags (Continued)

635.weather\_s: -lstdc++

## Base Optimization Flags

C benchmarks:

-Ofast -ipo -xCORE-AVX512 -mprefer-vector-width=512 -ansi-alias

C++ benchmarks:

-Ofast -ipo -xCORE-AVX512 -mprefer-vector-width=512 -ansi-alias

Fortran benchmarks:

-Ofast -ipo -xCORE-AVX512 -mprefer-vector-width=512  
-nostandard-realloc-lhs -align array64byte

## Base Other Flags

Fortran benchmarks:

628.pot3d\_s: -Wno-incompatible-function-pointer-types

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

[http://www.spec.org/hpc2021/flags/Intel\\_compiler\\_flags.2023-06-05.html](http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2023-06-05.html)

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

[http://www.spec.org/hpc2021/flags/Intel\\_compiler\\_flags.2023-06-05.xml](http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2023-06-05.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](mailto:info@spec.org).

Tested with SPEChpc2021 v1.1.8 on 2023-12-01 17:04:25-0500.  
Report generated on 2024-01-03 17:49:44 by hpc2021 PDF formatter v1.0.3.  
Originally published on 2024-01-03.