



SPEChpc™ 2021 Small Result

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Supermicro

Hyper SuperServer SYS-212H-TN
(Intel Xeon 6781P)

SPEChpc 2021_sml_base = 0.6835

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: 6569

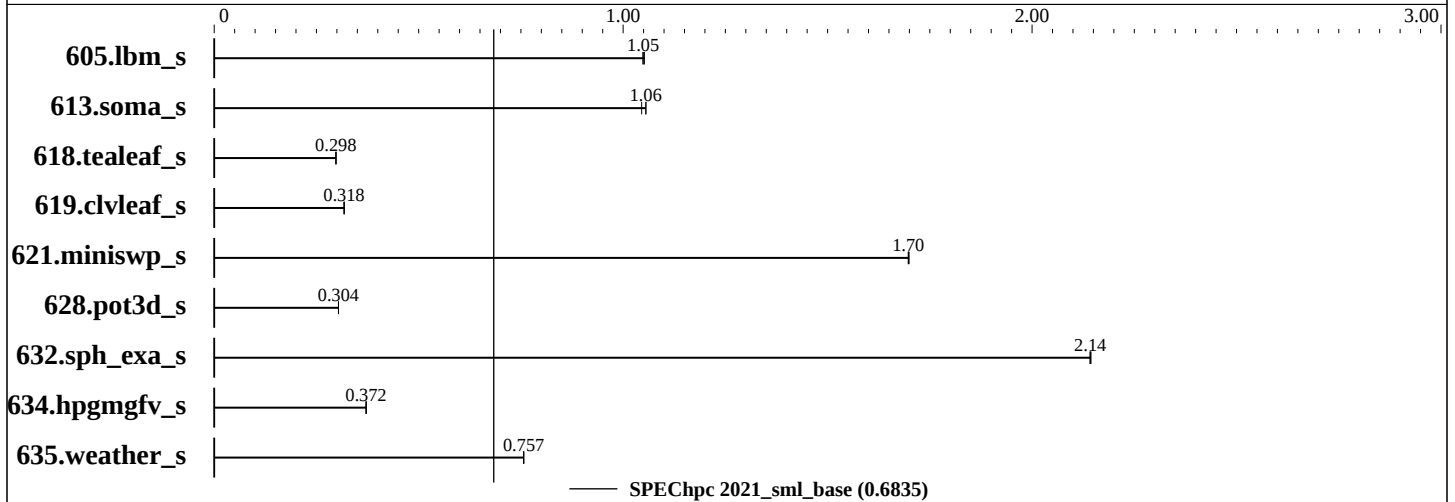
Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Jun-2025

Hardware Availability: Feb-2025

Software Availability: Apr-2025



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	160	1	<u>1477</u>	<u>1.05</u>	1479	1.05	1473	1.05									
613.soma_s	MPI	160	1	1516	1.06	<u>1516</u>	<u>1.06</u>	1531	1.05									
618.tealeaf_s	MPI	160	1	6886	0.298	6884	0.298	<u>6885</u>	<u>0.298</u>									
619.clvleaf_s	MPI	160	1	5193	0.318	5192	0.318	<u>5192</u>	<u>0.318</u>									
621.miniswp_s	MPI	160	1	648	1.70	<u>648</u>	<u>1.70</u>	647	1.70									
628.pot3d_s	MPI	160	1	5514	0.304	<u>5511</u>	<u>0.304</u>	5511	0.304									
632.sph_exa_s	MPI	160	1	1074	2.14	<u>1073</u>	<u>2.14</u>	1073	2.14									
634.hpgmgfv_s	MPI	160	1	2624	0.372	2624	0.372	<u>2624</u>	<u>0.372</u>									
635.weather_s	MPI	160	1	3437	0.756	<u>3435</u>	<u>0.757</u>	3434	0.757									

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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: Homogenous
Compute Node: Hyper SuperServer SYS-212H-TN
Interconnect: None
Compute Nodes Used: 1
Total Chips: 1
Total Cores: 80
Total Threads: 160
Total Memory: 512 GB
Total Accelerators: 0
Max. Peak Threads: --

Software Summary

Compiler: C/C++/Fortran: Version 2025.1.1 of Intel oneAPI Compiler
MPI Library: Intel MPI Library for Linux* OS, Version 2021.15 Build 20250213
Other MPI Info: None
Other Software: None
Base Parallel Model: MPI
Base Ranks Run: 160
Base Threads Run: 1
Peak Parallel Models: Not Run
Minimum Peak Ranks: --
Maximum Peak Ranks: --
Max. Peak Threads: --
Min. Peak Threads: --

Node Description: Hyper SuperServer SYS-212H-TN

Hardware

Number of nodes: 1
Uses of the node: compute
Vendor: Supermicro
Model: Hyper SuperServer SYS-212H-TN
CPU Name: Intel Xeon 6781P
CPU(s) orderable: 1 chip
Chips enabled: 1
Cores enabled: 80
Cores per chip: 80
Threads per core: 2
CPU Characteristics: Intel Turbo Boost Technology up to 3.8 GHz
CPU MHz: 2000
Primary Cache: 64 KB I + 48 KB D on chip per core
Secondary Cache: 2 MB I+D on chip per core
L3 Cache: 336 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (8 x 64 GB 2Rx4 PC5-6400B-R)
Disk Subsystem: 1 x 960 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

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Software

Accelerator Driver: None
Adapter: None
Adapter Driver: None
Adapter Firmware: None
Operating System: SUSE Linux Enterprise Linux Server 15 SP6 6.4.0-150600.21-default
Local File System: xfs
Shared File System: None
System State: Multi-user, run level 3
Other Software: None



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Node Description: Hyper SuperServer SYS-212H-TN

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) was used to start MPI jobs.

Compiler Version Notes

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CXXC 632.sph_exa_s(base)

Intel(R) oneAPI DPC++/C++ Compiler 2025.1.1 (2025.1.1.20250418)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2025.1/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2025.1/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 2025.1.1 (2025.1.1.20250418)

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Compiler Version Notes (Continued)

Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2025.1/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2025.1/bin/compiler/.../icx.cfg

=====

FC 619.clvleaf_s(base) 635.weather_s(base)

ifx (IFX) 2025.1.1 20250418
Copyright (C) 1985-2025 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) 2025.1.1 20250418
Copyright (C) 1985-2025 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++ -std=c++14
634.hpgmgfv_s: -lstdc++

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Base Portability Flags (Continued)

635.weather_s: -lstdc++

Base Optimization Flags

C benchmarks:

-O3 -ipo -xCORE-AVX512 -mprefer-vector-width=512
-qopt-multiple-gather-scatter-by-shuffles -ffast-math -fltto
-funroll-loops -fimf-precision=low:sin,sqrt -ansi-alias

C++ benchmarks:

-O3 -ipo -xCORE-AVX512 -mprefer-vector-width=512
-qopt-multiple-gather-scatter-by-shuffles -ffast-math -fltto
-funroll-loops -fimf-precision=low:sin,sqrt -ansi-alias

Fortran benchmarks:

-O3 -ipo -xCORE-AVX512 -mprefer-vector-width=512
-qopt-multiple-gather-scatter-by-shuffles -ffast-math -fltto
-funroll-loops -fimf-precision=low:sin,sqrt -nostandard-realloc-lhs
-align array64byte

Base Other Flags

C benchmarks:

-Ispecmpitime -Wno-incompatible-function-pointer-types

C++ benchmarks:

-Ispecmpitime -Wno-incompatible-function-pointer-types

Fortran benchmarks:

619.clvleaf_s: -Ispecmpitime

628.pot3d_s: -Wno-incompatible-function-pointer-types

635.weather_s: No flags used

The flags file that was used to format this result can be browsed at
http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2025-05-22.html



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You can also download the XML flags source by saving the following link:
http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2025-05-22.xml

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

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