SPEChpc™ 2021 Small Result

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Supermicro

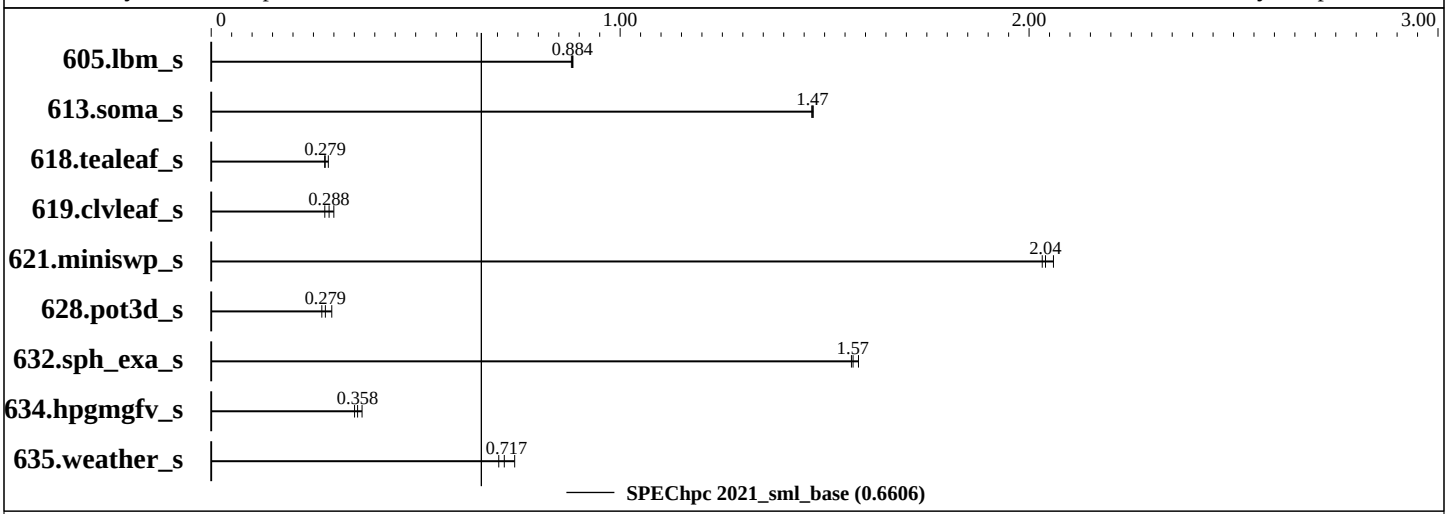
WIO SuperServer SYS-512B-WR
(Intel Xeon 6767P)

SPEChpc 2021_sml_base = 0.6606

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	OMP	2	64	1752	0.885	**1754**	**0.884**	1760	0.881									
613.soma_s	OMP	2	64	1087	1.47	**1088**	**1.47**	1090	1.47									
618.tealeaf_s	OMP	2	64	7158	0.286	7389	0.277	**7354**	**0.279**									
619.clvleaf_s	OMP	2	64	**5724**	**0.288**	5940	0.278	5502	0.300									
621.miniswp_s	OMP	2	64	**539**	**2.04**	541	2.03	534	2.06									
628.pot3d_s	OMP	2	64	**6000**	**0.279**	6193	0.270	5681	0.295									
632.sph_exa_s	OMP	2	64	1469	1.57	**1465**	**1.57**	1453	1.58									
634.hpgmgfv_s	OMP	2	64	**2724**	**0.358**	2781	0.351	2643	0.369									
635.weather_s	OMP	2	64	**3628**	**0.717**	3697	0.703	3504	0.742									

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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:	WIO SuperServer SYS-512B-WR
Interconnect:	None
Compute Nodes Used:	1
Total Chips:	1
Total Cores:	64
Total Threads:	128
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:	OMP
Base Ranks Run:	2
Base Threads Run:	64
Peak Parallel Models:	Not Run
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--
Max. Peak Threads:	--
Min. Peak Threads:	--

Node Description: WIO SuperServer SYS-512B-WR

Hardware

Number of nodes:	1
Uses of the node:	compute
Vendor:	Supermicro
Model:	WIO SuperServer SYS-512B-WR
CPU Name:	Intel Xeon 6767P
CPU(s) orderable:	1 chip
Chips enabled:	1
Cores enabled:	64
Cores per chip:	64
Threads per core:	2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.9 GHz
CPU MHz:	2400
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 256 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:	btrfs
Shared File System:	None
System State:	Multi-user, run level 3
Other Software:	None

Node Description: WIO SuperServer SYS-512B-WR

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

```
==============================================================================
 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 -flto -funroll-loops -fimf-precision=low:sin,sqrt -fiopenmp -ansi-alias`

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

Fortran benchmarks:
`-O3 -ipo -xCORE-AVX512 -mprefer-vector-width=512 -qopt-multiple-gather-scatter-by-shuffles -ffast-math -flto -funroll-loops -fimf-precision=low:sin,sqrt -fiopenmp -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`

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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