



SPEChpc™ 2021 Small Result

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Supermicro

SPEChpc 2021_sml_base = 0.9018

SuperServer SYS-741GE-TNRT (Intel Xeon Platinum 8490H)

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: 6569

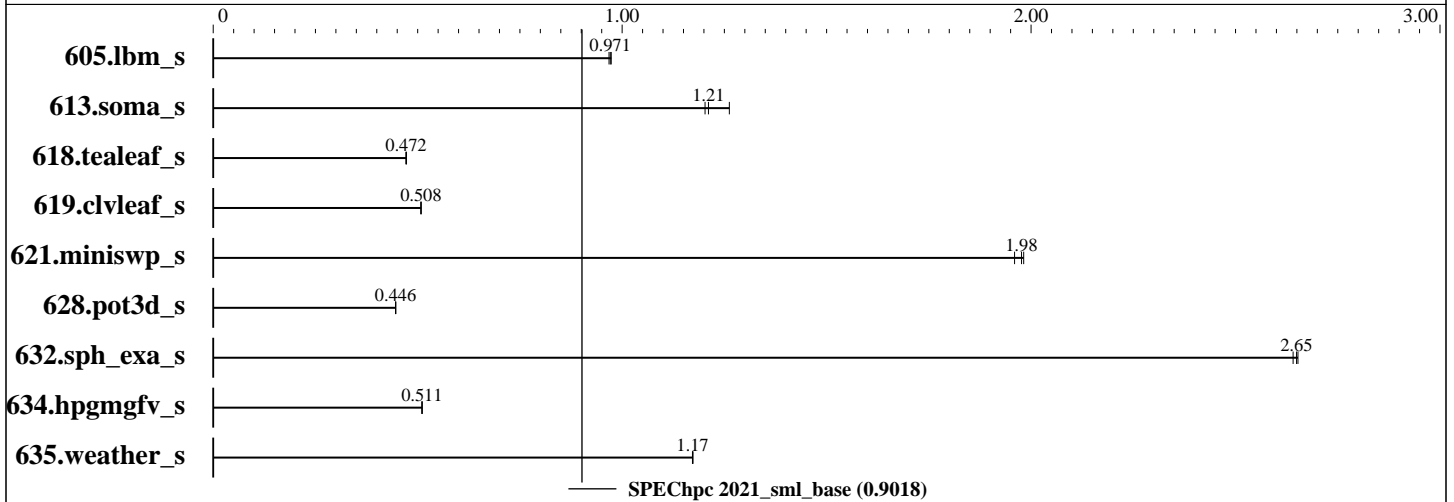
Test Date: Dec-2022

Test Sponsor: Supermicro

Hardware Availability: Jan-2023

Tested by: Supermicro

Software Availability: Dec-2022



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	120	1	1601	0.968	1596	0.971	1592	0.973										
613.soma_s	MPI	120	1	1330	1.20	1321	1.21	1268	1.26										
618.tealeaf_s	MPI	120	1	4345	0.472	4349	0.471	4337	0.473										
619.clvleaf_s	MPI	120	1	3248	0.508	3247	0.508	3246	0.508										
621.miniswp_s	MPI	120	1	561	1.96	556	1.98	555	1.98										
628.pot3d_s	MPI	120	1	3755	0.446	3754	0.446	3753	0.446										
632.sph_exa_s	MPI	120	1	871	2.64	868	2.65	867	2.65										
634.hpgmgfv_s	MPI	120	1	1908	0.511	1910	0.511	1910	0.511										
635.weather_s	MPI	120	1	2218	1.17	2218	1.17	2216	1.17										

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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: SuperServer SYS-741GE-TNRT
Interconnect: N/A
Compute Nodes Used: 1
Total Chips: 2
Total Cores: 120
Total Threads: 240
Total Memory: 512 GB
Max. Peak Threads: --

Software Summary

Compiler: C/C++/Fortran: Version 2023.0.0 of Intel oneAPI Compiler
MPI Library: Intel MPI Library for Linux* OS, Version 2021.8.0 Build 20221129
Other MPI Info: None
Other Software: None
Base Parallel Model: MPI
Base Ranks Run: 120
Base Threads Run: 1
Peak Parallel Models: Not Run
Minimum Peak Ranks: --
Maximum Peak Ranks: --
Max. Peak Threads: --
Min. Peak Threads: --

Node Description: SuperServer SYS-741GE-TNRT

Hardware

Number of nodes: 1
Uses of the node: Compute
Vendor: Supermicro
Model: SuperServer SYS-741GE-TNRT
CPU Name: Intel Xeon Platinum 8490H
CPU(s) orderable: 1, 2 chips
Chips enabled: 2
Cores enabled: 120
Cores per chip: 60
Threads per core: 2
CPU Characteristics: Intel Turbo Boost Technology up to 3.5 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: 112.5 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)
Disk Subsystem: 1 x 256 GB Apacer M.2 NVMe SSD
Other Hardware: None
Accel Count: --
Accel Model: --
Accel Vendor: --
Accel Type: --
Accel Connection: --
Accel ECC enabled: --
Accel Description: --
Adapter: None
Number of Adapters: 0
Slot Type: None
Data Rate: None

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Software

Accelerator Driver: --
Adapter: None
Adapter Driver: None
Adapter Firmware: None
Operating System: SUSE Linux Enterprise Server 15 SP4 Kernel 5.14.21-150400.22-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: SuperServer SYS-741GE-TNRT

Hardware (Continued)

Ports Used: 0
Interconnect Type: None

Interconnect Description: N/A

Hardware

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

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 2023.0.0 (2023.0.0.20221201)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2023.0.0/linux/bin-llvm
Configuration file:
/opt/intel/oneapi/compiler/2023.0.0/linux/bin-llvm/./bin/icpx.cfg

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

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Compiler Version Notes (Continued)

```
Intel(R) oneAPI DPC++/C++ Compiler 2023.0.0 (2023.0.0.20221201)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2023.0.0/linux/bin-llvm
Configuration file:
/opt/intel/oneapi/compiler/2023.0.0/linux/bin-llvm/./bin/icx.cfg
```

```
=====
FC 619.clvleaf_s(base) 635.weather_s(base)
-----
```

```
ifx (IFORT) 2023.0.0 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
-----
```

```
=====
FC 628.pot3d_s(base)
-----
```

```
ifx: command line warning #10157: ignoring option '-W'; argument is of wrong
type
ifx (IFORT) 2023.0.0 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
-----
```

Base Compiler Invocation

C benchmarks:
mpiicc -cc=icx

C++ benchmarks:
mpicpc -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++
```

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Base Portability Flags (Continued)

632.sph_exa_s: -lstdc++
634.hpgmgfv_s: -lstdc++
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

C benchmarks:

-Ispecmpitime

C++ benchmarks:

-Ispecmpitime

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.2023-02-09.html

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2023-02-09.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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