



SPEChpc™ 2021 Tiny Result

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Supermicro

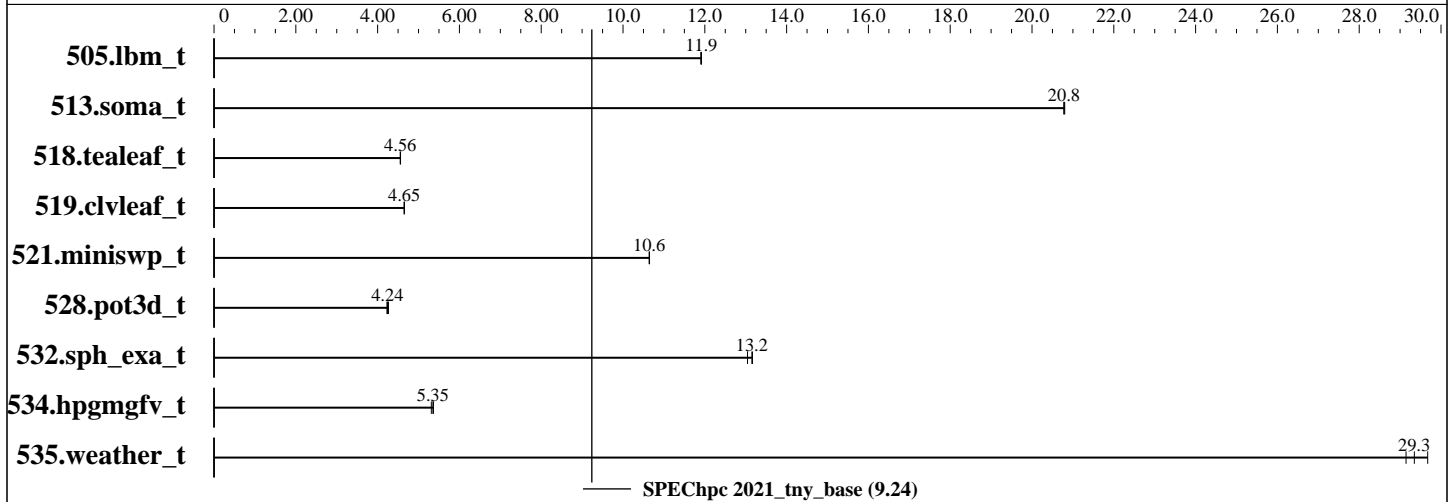
SPEChpc 2021_tny_base = 9.24

SPEChpc 2021_tny_peak = Not Run

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

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

Test Date: Dec-2022
Hardware Availability: Jan-2023
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
505.lbm_t	OMP	8	30	189	11.9	<u>189</u>	<u>11.9</u>	189	11.9									
513.soma_t	OMP	8	30	178	20.8	<u>178</u>	<u>20.8</u>	178	20.8									
518.tealeaf_t	OMP	8	30	362	4.55	362	4.56	<u>362</u>	<u>4.56</u>									
519.clvleaf_t	OMP	8	30	<u>355</u>	<u>4.65</u>	355	4.65	355	4.65									
521.miniswp_t	OMP	8	30	150	10.6	150	10.6	<u>150</u>	<u>10.6</u>									
528.pot3d_t	OMP	8	30	498	4.26	<u>501</u>	<u>4.24</u>	503	4.23									
532.sph_exa_t	OMP	8	30	148	13.2	149	13.0	<u>148</u>	<u>13.2</u>									
534.hpgmgfv_t	OMP	8	30	<u>220</u>	<u>5.35</u>	219	5.36	221	5.31									
535.weather_t	OMP	8	30	<u>110</u>	<u>29.3</u>	109	29.7	111	29.1									

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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: OMP
Base Ranks Run: 8
Base Threads Run: 30
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 532.sph_exa_t(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 505.lbm_t(base) 513.soma_t(base) 518.tealeaf_t(base) 521.miniswp_t(base)
534.hpgmgfv_t(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 519.clvleaf_t(base) 535.weather_t(base)
-----
```

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

```
=====
FC 528.pot3d_t(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

```
505.lbm_t: -lstdc++
513.soma_t: -lstdc++ -DSPEC_NO_VAR_ARRAY_REDUCE
518.tealeaf_t: -lstdc++
519.clvleaf_t: -lstdc++
521.miniswp_t: -lstdc++
528.pot3d_t: -lstdc++
```

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Base Portability Flags (Continued)

532.sph_exa_t: -lstdc++
534.hpgmgfv_t: -lstdc++
535.weather_t: -lstdc++

Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

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

Fortran benchmarks:

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

Base Other Flags

C benchmarks (except as noted below):

-Ispecmpitime

521.miniswp_t: -Ispecmpitime/

534.hpgmgfv_t: -Ispecmpitime

C++ benchmarks:

-Ispecmpitime

Fortran benchmarks:

519.clvleaf_t: -Ispecmpitime

528.pot3d_t: -Wno-incompatible-function-pointer-types

535.weather_t: No flags used



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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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