



SPEChpc™ 2021 Tiny Result

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xFusion

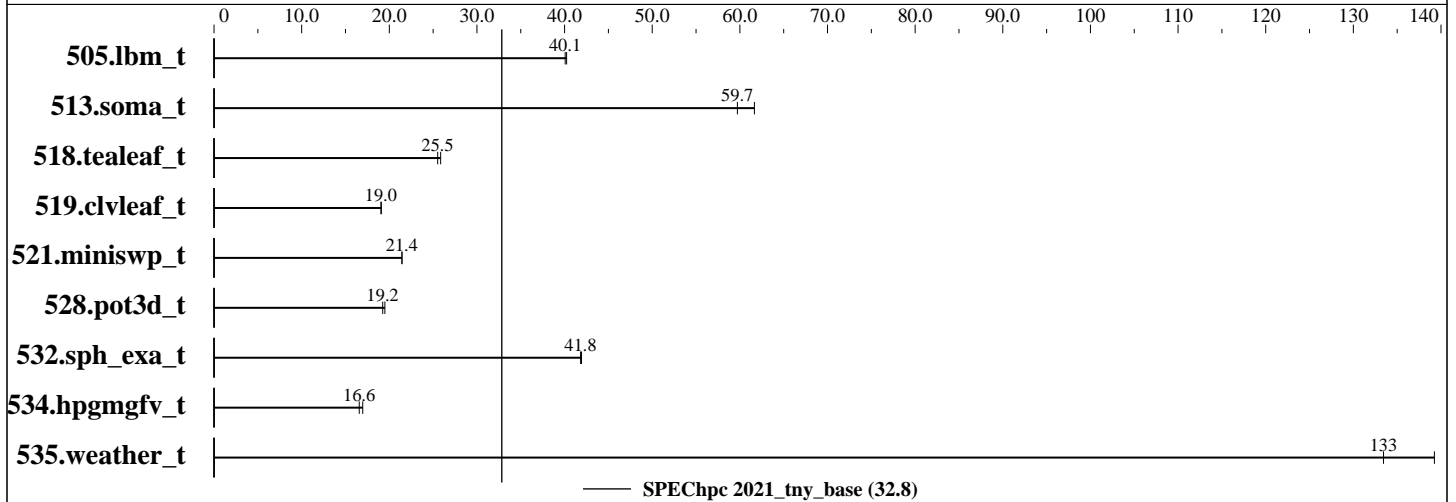
SPEChpc 2021_tny_base = 32.8

SPEChpc 2021_tny_peak = Not Run

xFusion FusionServer 2288H V7 (Intel Xeon Platinum 8490H)

hpc2021 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Apr-2023
Hardware Availability: Jan-2023
Software Availability: Nov-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	32	30	55.9	40.2	<u>56.2</u>	<u>40.1</u>											
513.soma_t	OMP	32	30	60.0	61.7	62.0	59.7											
518.tealeaf_t	OMP	32	30	64.7	<u>25.5</u>	63.8	25.9											
519.cvlleaf_t	OMP	32	30	86.6	<u>19.0</u>	86.4	19.1											
521.miniswp_t	OMP	32	30	74.6	21.4	74.6	21.4											
528.pot3d_t	OMP	32	30	110	<u>19.2</u>	109	19.5											
532.sph_exa_t	OMP	32	30	46.5	41.9	46.6	41.8											
534.hpgmgfv_t	OMP	32	30	70.9	<u>16.6</u>	69.2	17.0											
535.weather_t	OMP	32	30	24.2	133	23.2	139											

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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 Cluster
Compute Node: xFusion FusionServer 2288H V7
Interconnect: Mellanox HDR
Node Node: xFusion FusionServer 2288H V7
Compute Nodes Used: 4
Total Chips: 8
Total Cores: 480
Total Threads: 960
Total Memory: 2 TB
Max. Peak Threads: --

Software Summary

Compiler: C/C++/Fortran: Version 2022.2.1 of Intel oneAPI Compiler
MPI Library: Intel MPI Library for Linux* OS, Version 2022.2.1 Build 20221020
Other MPI Info: N/A
Other Software: N/A
Base Parallel Model: OMP
Base Ranks Run: 32
Base Threads Run: 30
Peak Parallel Models: Not Run
Minimum Peak Ranks: --
Maximum Peak Ranks: --
Max. Peak Threads: --
Min. Peak Threads: --

Node Description: xFusion FusionServer 2288H V7

Hardware

Number of nodes: 4
Uses of the node: Compute Node
Vendor: xFusion
Model: xFusion FusionServer 2288H V7
CPU Name: Intel Xeon Platinum 8490H
CPU(s) orderable: 2 chips
Chips enabled: 2
Cores enabled: 120
Cores per chip: 60
Threads per core: 2
CPU Characteristics: 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 2Rx4 PC5-4800B-R)
Disk Subsystem: 1 x 7.68 TB NVMe SSD
Other Hardware: None
Accel Count: N/A
Accel Model: N/A
Accel Vendor: N/A
Accel Type: N/A
Accel Connection: N/A
Accel ECC enabled: N/A
Accel Description: N/A
Adapter: MCX653105A-EFAT
Number of Adapters: 1
Slot Type: PCI-Express 4.0 x16
Data Rate: 100 Gb/s

Software

Accelerator Driver: N/A
Adapter: MCX653105A-EFAT
Adapter Driver: 5.4-3.1.0
Adapter Firmware: 20.32.1010
Operating System: CentOS Linux release 8.2.2004 4.18.0-193.el8.x86_644
Local File System: xfs
Shared File System: NFS
System State: Multi-user, run level 3
Other Software: N/A

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Node Description: xFusion FusionServer 2288H V7

Hardware (Continued)

Ports Used: 1
Interconnect Type: Mellanox HDR

Interconnect Description: Mellanox HDR

Hardware

Vendor: Mellanox
Model: Mellanox HDR
Switch Model: Mellanox MQM8790-HS2F
InfiniBand Switch
Number of Switches: 1
Number of Ports: 40
Data Rate: 200 Gbit/s
Firmware: 27.2010.1202
Topology: Mesh
Primary Use: MPI

Software

: --

Submit Notes

The config file option 'submit' was used.
export LD_PRELOAD="/usr/lib64/libhugetlbfs.so \$LD_PRELOAD"
export OMP_PROC_BIND=true
mpirun.hydra -bootstrap ssh --bind-to core -hostfile \${top}/\${hostfile} -np \$ranks -ppn \$ppn -genv OMP_NUM_THREADS=\$threads \$command

Compiler Version Notes

=====
CC 505.lbm_t(base) 513.soma_t(base) 518.tealeaf_t(base) 521.miniswp_t(base)
534.hpgmgfv_t(base)

Intel(R) oneAPI DPC++/C++ Compiler 2022.1.0 (2022.1.0.20220316)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /nfsshare/opt/intel/2022.2.0/compiler/latest/linux/bin-llvm

=====
CXXC 532.sph_exa_t(base)

Intel(R) oneAPI DPC++/C++ Compiler 2022.1.0 (2022.1.0.20220316)
Target: x86_64-unknown-linux-gnu
Thread model: posix

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Compiler Version Notes (Continued)

InstalledDir: /nfsshare/opt/intel/2022.2.0/compiler/latest/linux/bin-llvm

=====
FC 519.clvleaf_t(base) 535.weather_t(base)

ifx (IFORT) 2022.1.0 20220316
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) 2022.1.0 20220316
Copyright (C) 1985-2022 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

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



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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
-nostandard-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

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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