



SPEChpc™ 2021 Tiny Result

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Cisco Systems

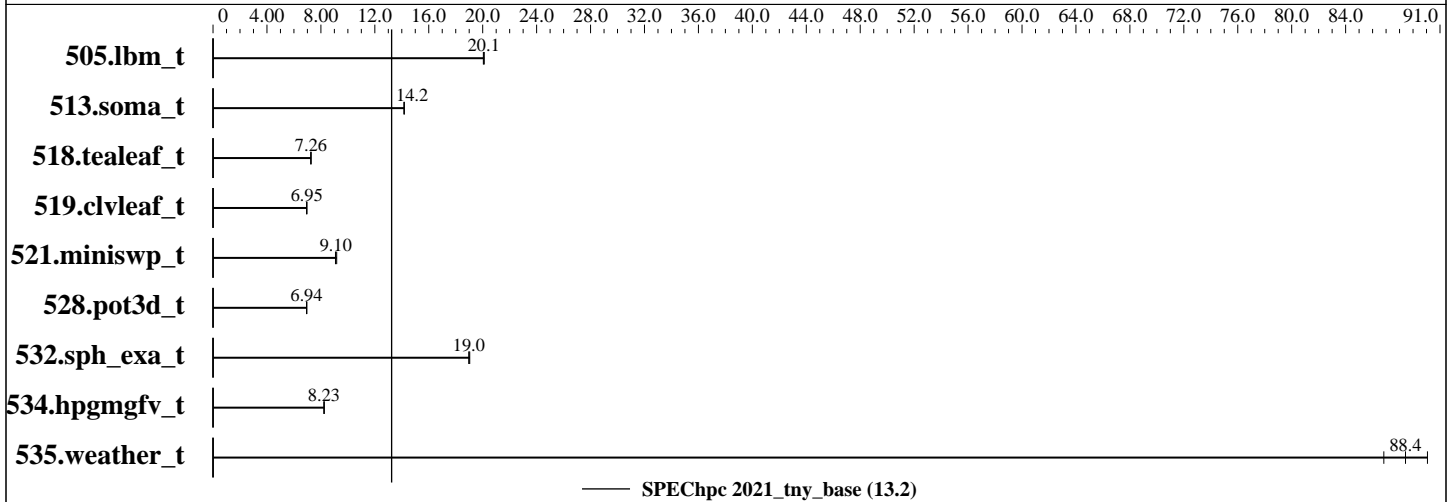
SPEChpc 2021_tny_base = 13.2

Cisco UCS C245 M8 (AMD EPYC 9754)

SPEChpc 2021_tny_peak = Not Run

hpc2021 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

Test Date: May-2024
Hardware Availability: Jun-2024
Software Availability: Feb-2024



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	MPI	256	1	112	20.1	112	20.0	<u>112</u>	<u>20.1</u>									
513.soma_t	MPI	256	1	261	14.2	261	14.2	<u>261</u>	<u>14.2</u>									
518.tealeaf_t	MPI	256	1	227	7.27	<u>227</u>	<u>7.26</u>	228	7.25									
519.clvleaf_t	MPI	256	1	238	6.95	237	6.95	<u>237</u>	<u>6.95</u>									
521.miniswp_t	MPI	256	1	176	9.08	<u>176</u>	<u>9.10</u>	174	9.17									
528.pot3d_t	MPI	256	1	306	6.95	<u>306</u>	<u>6.94</u>	306	6.94									
532.sph_exa_t	MPI	256	1	103	19.0	102	19.0	<u>103</u>	<u>19.0</u>									
534.hpgmgfv_t	MPI	256	1	142	8.25	143	8.23	<u>143</u>	<u>8.23</u>									
535.weather_t	MPI	256	1	37.1	86.8	35.8	90.1	<u>36.5</u>	<u>88.4</u>									

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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: Cisco UCS C245 M8
Compute Nodes Used: 1
Total Chips: 2
Total Cores: 256
Total Threads: 512
Total Memory: 1536 GB
Max. Peak Threads: --

Software Summary

Compiler: Intel oneAPI DPC++/C++ Compiler 2024.0.2
MPI Library: Intel MPI Library for Linux OS, Build 20231005
Other MPI Info: None
Other Software: None
Base Parallel Model: MPI
Base Ranks Run: 256
Base Threads Run: 1
Peak Parallel Models: Not Run
Minimum Peak Ranks: --
Maximum Peak Ranks: --
Max. Peak Threads: --
Min. Peak Threads: --

Node Description: Cisco UCS C245 M8

Hardware

Number of nodes: 1
Uses of the node: compute
Vendor: Cisco Systems
Model: Cisco UCS C245 M8
CPU Name: AMD EPYC 9754
CPU(s) orderable: 1,2 chips
Chips enabled: 2
Cores enabled: 256
Cores per chip: 128
Threads per core: 2
CPU Characteristics: Max. Boost Clock upto 3.1GHz
CPU MHz: 2250
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 256 MB I+D on chip per chip
16 MB shared / 8 cores
Other Cache: None
Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-5600B-R, running at 4800 MHz)
Disk Subsystem: 1 x 960 GB 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

Software

Accelerator Driver: --
Adapter: None
Adapter Driver: None
Adapter Firmware: None
Operating System: SUSE Linux Enterprise Server 15 SP5
Kernel 5.14.21-150500.53-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: Cisco UCS C245 M8

Hardware (Continued)

Ports Used: 0
Interconnect Type: None

Submit Notes

The config file option 'submit' was used.
mpirun --bind-to core:overload-allowed --oversubscribe --mca topo basic -np \$ranks \$command

General Notes

MPI startup command:
mpirun command was used to start MPI jobs.

Compiler Version Notes

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

Intel(R) oneAPI DPC++/C++ Compiler 2024.0.2 (2024.0.2.20231213)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /home/intel_tools/compiler/compiler/2024.0/bin/compiler
Configuration file:
/home/intel_tools/compiler/compiler/2024.0/bin/compiler/./icpx.cfg
=====

=====
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 2024.0.2 (2024.0.2.20231213)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /home/intel_tools/compiler/compiler/2024.0/bin/compiler
Configuration file:
/home/intel_tools/compiler/compiler/2024.0/bin/compiler/./icx.cfg
=====

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

ifx (IFX) 2024.0.2 20231213
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Compiler Version Notes (Continued)

FC 528.pot3d_t(base)

ifx: command line warning #10157: ignoring option '-W'; argument is of wrong type

ifx (IFX) 2024.0.2 20231213

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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.cvlleaf_t: -lstdc++

521.miniswp_t: -lstdc++

528.pot3d_t: -lstdc++

532.sph_exa_t: -lstdc++

534.hpgmgfv_t: -lstdc++

535.weather_t: -lstdc++

Base Optimization Flags

C benchmarks:

-Ofast -ipo -mprefer-vector-width=512 -march=common-avx512

-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:

-Ofast -ipo -mprefer-vector-width=512 -march=common-avx512
-ansi-alias

Fortran benchmarks:

-Ofast -ipo -mprefer-vector-width=512 -march=common-avx512
-nostandard-realloc-lhs -align array64byte

Base Other Flags

Fortran benchmarks:

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

The flags file that was used to format this result can be browsed at

http://www.spec.org/hpc2021/flags/Intel_compiler_flags_hpc.2024.html

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags_hpc.2024.xml

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

Tested with SPEChpc2021 v1.1.8 on 2024-04-17 20:54:48-0400.

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