



SPEChpc™ 2021 Tiny Result

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Cisco Systems

SPEChpc 2021_tny_base = 7.32

Cisco UCS C245 M8 (AMD EPYC 9754)

SPEChpc 2021_tny_peak = Not Run

hpc2021 License: 9019

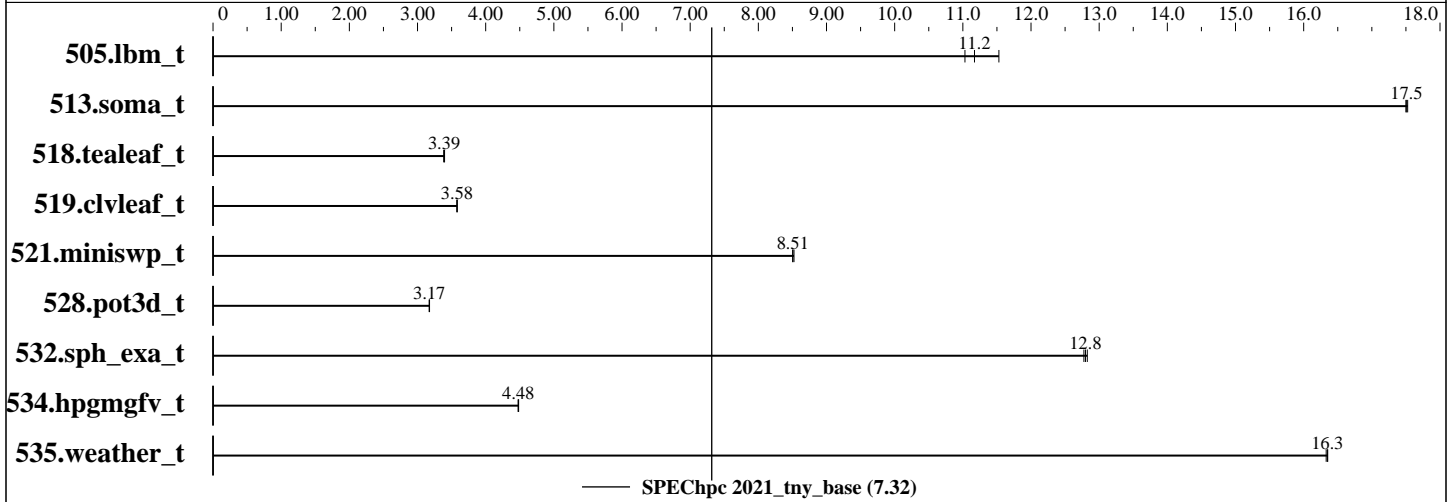
Test Date: May-2024

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2024

Tested by: Cisco Systems

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 | OMP | 32 | 8 | 204 | 11.0 | 195 | 11.5 | 201 | 11.2 | | | | | | | | | |
| 513.soma_t | OMP | 32 | 8 | 211 | 17.5 | 211 | 17.5 | 211 | 17.5 | | | | | | | | | |
| 518.tealeaf_t | OMP | 32 | 8 | 486 | 3.40 | 487 | 3.39 | 487 | 3.38 | | | | | | | | | |
| 519.clvleaf_t | OMP | 32 | 8 | 461 | 3.58 | 461 | 3.58 | 461 | 3.58 | | | | | | | | | |
| 521.miniswp_t | OMP | 32 | 8 | 188 | 8.50 | 188 | 8.52 | 188 | 8.51 | | | | | | | | | |
| 528.pot3d_t | OMP | 32 | 8 | 669 | 3.18 | 670 | 3.17 | 670 | 3.17 | | | | | | | | | |
| 532.sph_exa_t | OMP | 32 | 8 | 153 | 12.8 | 152 | 12.8 | 152 | 12.8 | | | | | | | | | |
| 534.hpgmgfv_t | OMP | 32 | 8 | 262 | 4.48 | 262 | 4.48 | 262 | 4.48 | | | | | | | | | |
| 535.weather_t | OMP | 32 | 8 | 197 | 16.4 | 197 | 16.3 | 197 | 16.3 | | | | | | | | | |

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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: 1
Total Cores: 128
Total Threads: 256
Total Memory: 768 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: OMP
Base Ranks Run: 32
Base Threads Run: 8
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: 1
Cores enabled: 128
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: 768 GB (12 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.

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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=====

=====
FC 528.pot3d_t(base)
=====

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

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Compiler Version Notes (Continued)

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 -fiopenmp
-ansi-alias

C++ benchmarks:
-Ofast -ipo -mprefer-vector-width=512 -march=common-avx512 -fiopenmp
-ansi-alias

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



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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.

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