



SPEChpc™ 2021 Small Result

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Cisco Systems

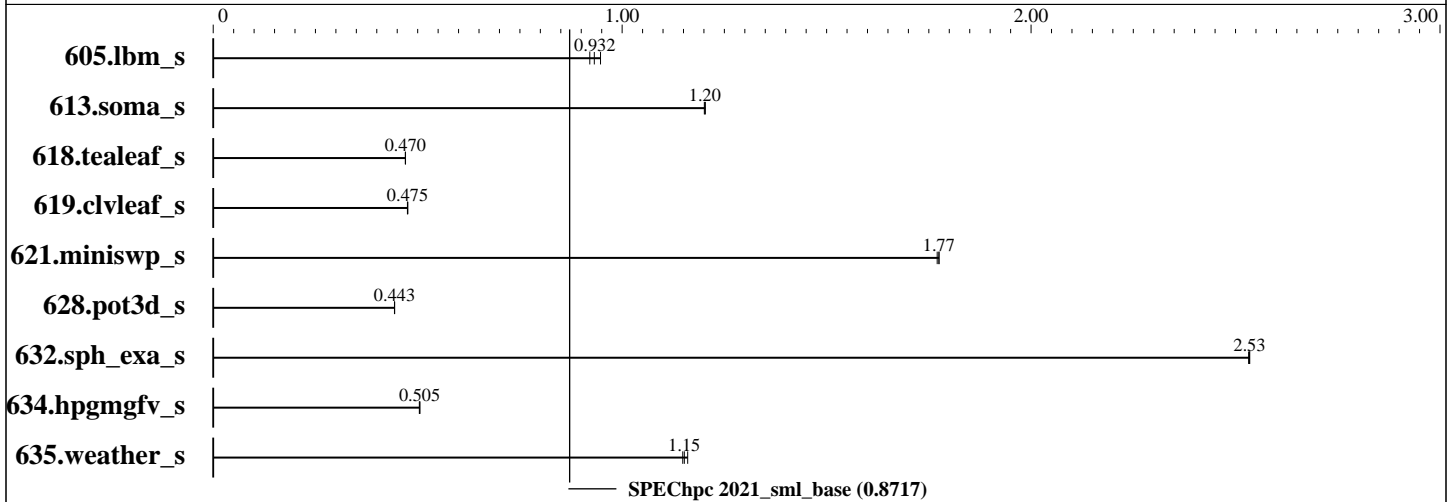
SPEChpc 2021_sml_base = 0.8717

Cisco UCS X210c M7 (Intel Xeon Platinum 8490H)

SPEChpc 2021_sml_peak = Not Run

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

Test Date: Dec-2022
Hardware Availability: Mar-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
605.lbm_s	MPI	120	1	1637	0.947	1663	0.932	1683	0.921									
613.soma_s	MPI	120	1	1330	1.20	1331	1.20	1332	1.20									
618.tealeaf_s	MPI	120	1	4362	0.470	4359	0.470	4362	0.470									
619.clvleaf_s	MPI	120	1	3474	0.475	3467	0.476	3471	0.475									
621.miniswp_s	MPI	120	1	620	1.77	620	1.77	621	1.77									
628.pot3d_s	MPI	120	1	3777	0.443	3779	0.443	3776	0.444									
632.sph_exa_s	MPI	120	1	907	2.53	908	2.53	908	2.53									
634.hpgmgfv_s	MPI	120	1	1934	0.504	1929	0.505	1931	0.505									
635.weather_s	MPI	120	1	2257	1.15	2241	1.16	2264	1.15									

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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 X210c M7
 Interconnect: N/A
 Compute Nodes Used: 1
 Total Chips: 2
 Total Cores: 120
 Total Threads: 240
 Total Memory: 1 TB
 Max. Peak Threads: --

Software Summary

Compiler: Intel oneAPI Compiler 2022.2.1
 MPI Library: Intel MPI Library for Linux* OS, Version 2022.2.1 Build 20221020
 Other MPI Info: --
 Other Software: --
 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: Cisco UCS X210c M7

Hardware

Number of nodes: 1
 Uses of the node: Compute
 Vendor: Cisco Systems
 Model: Cisco UCS X210c M7
 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: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
 Disk Subsystem: 1 x 960 GB M.2 SSD SATA
 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
 Ports Used: 0

Software

Accelerator Driver: --
 Adapter: None
 Adapter Driver: None
 Adapter Firmware: None
 Operating System: SUSE Linux Enterprise Server 15 SP4 , 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: Cisco UCS X210c M7

Hardware (Continued)

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.
export LD_PRELOAD="/usr/lib64/libhugetlbfs.so \$LD_PRELOAD"
export OMP_PROC_BIND=true
mpiexec.hydra -bootstrap ssh -hostfile /home/hpc2021/1node --bind-to core -np \$ranks -ppn \$ppn -genv OMP_NUM_THREADS=\$threads \$command

Compiler Version Notes

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

Intel(R) oneAPI DPC++/C++ Compiler 2022.2.1 (2022.2.1.20221020)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /home/tools-intel/compiler/compiler/2022.2.1/linux/bin-llvm
Configuration file:
/home/tools-intel/compiler/compiler/2022.2.1/linux/bin/icx.cfg
=====

=====
CXXC 632.sph_exa_s(base)
=====

Intel(R) oneAPI DPC++/C++ Compiler 2022.2.1 (2022.2.1.20221020)
Target: x86_64-unknown-linux-gnu
Thread model: posix

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Compiler Version Notes (Continued)

InstalledDir: /home/tools-intel/compiler/compiler/2022.2.1/linux/bin-llvm
Configuration file:
/home/tools-intel/compiler/compiler/2022.2.1/linux/bin/icx.cfg

FC 619.clvleaf_s(base) 628.pot3d_s(base) 635.weather_s(base)

ifx (IFORT) 2022.2.1 20221020
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Base Compiler Invocation

C benchmarks:

mpiicc -cc=icx -lstdc++(*)

C++ benchmarks:

mpicpc -cxx=icx -lstdc++(*)

Fortran benchmarks:

mpiifort -fc=ifx -lstdc++(*)

(*) Indicates a compiler flag that was found in a non-compiler variable.

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



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Base Other Flags

C benchmarks:
-Ispecmpitime

C++ benchmarks:
-Ispecmpitime

Fortran benchmarks:

619.clvleaf_s: -Ispecmpitime

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

<http://www.spec.org/hpc2021/flags/Intel-oneAPI-icx2021-official-linux64.html>

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

<http://www.spec.org/hpc2021/flags/Intel-oneAPI-icx2021-official-linux64.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 v1.1.7 on 2022-12-13 03:31:27-0500.
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