



SPEChpc™ 2021 Small Result

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Lenovo Global Technology

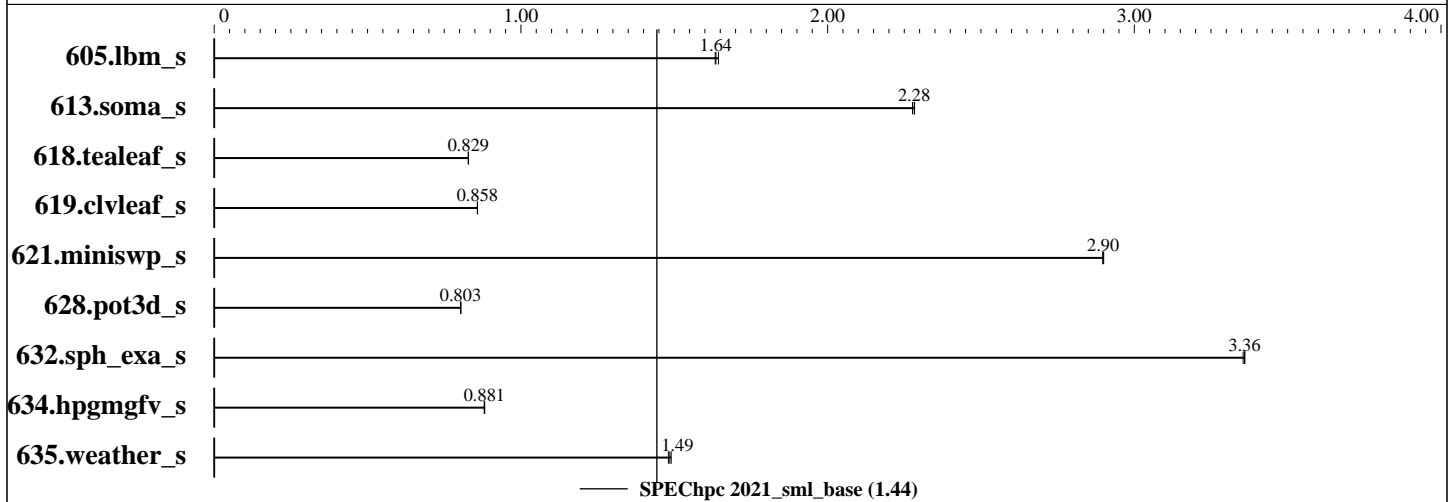
SPEChpc 2021_sml_base = 1.44

ThinkSystem SR950 (Intel Xeon Platinum 8280L)

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: 28
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Aug-2021
Hardware Availability: Apr-2019
Software Availability: Sep-2020



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	OMP	32	7	943	1.64	<u>947</u>	<u>1.64</u>	949	1.63									
613.soma_s	OMP	32	7	701	2.28	<u>701</u>	<u>2.28</u>	703	2.28									
618.tealeaf_s	OMP	32	7	<u>2474</u>	<u>0.829</u>	2474	0.829	2473	0.829									
619.clvleaf_s	OMP	32	7	<u>1923</u>	<u>0.858</u>	1923	0.858	1922	0.859									
621.miniswp_s	OMP	32	7	380	2.90	379	2.90	<u>379</u>	<u>2.90</u>									
628.pot3d_s	OMP	32	7	2081	0.805	<u>2086</u>	<u>0.803</u>	2086	0.803									
632.sph_exa_s	OMP	32	7	684	3.36	686	3.35	<u>685</u>	<u>3.36</u>									
634.hpgmgfv_s	OMP	32	7	1105	0.882	<u>1107</u>	<u>0.881</u>	1108	0.880									
635.weather_s	OMP	32	7	<u>1750</u>	<u>1.49</u>	1745	1.49	1756	1.48									

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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: ThinkSystem SR950
Interconnect: N/A
Compute Nodes Used: 1
Total Chips: 8
Total Cores: 224
Total Threads: 224
Total Memory: 1536 GB
Max. Peak Threads: --

Software Summary

Compiler: Intel oneAPI C/C++/Fortran Compiler
Version 2021.2.0 Build 20210228
MPI Library: Intel oneAPI MPI Library for Linux* OS
Version 2020 Version 2021.2 Build 20210302
Other MPI Info: --
Other Software: --
Base Parallel Model: OMP
Base Ranks Run: 32
Base Threads Run: 7
Peak Parallel Models: Not Run
Minimum Peak Ranks: --
Maximum Peak Ranks: --
Max. Peak Threads: --
Min. Peak Threads: --

Node Description: ThinkSystem SR950

Hardware

Number of nodes: 1
Uses of the node: compute
Vendor: Lenovo Global Technology
Model: ThinkSystem SR950
CPU Name: Intel Xeon Platinum 8280L
CPU(s) orderable: 2,3,4,6,8 chips
Chips enabled: 8
Cores enabled: 224
Cores per chip: 28
Threads per core: 1
CPU Characteristics: Intel Turbo Boost Technology up to 4.0 GHz
CPU MHz: 2700
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 39424 KB I+D on chip per chip
Other Cache: None
Memory: 1536 GB (96 x 16 GB 2Rx8 PC4-2933Y-R)
Disk Subsystem: 1 x 960 GB NVME 2.5" 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

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Software

Accelerator Driver: --
Adapter: None
Adapter Driver: None
Adapter Firmware: None
Operating System: Red Hat Enterprise Linux Server release 7.6,
Kernel 3.10.0-957.el7.x86_64
Local File System: xfs
Shared File System: None
System State: Multi-user, run level 3
Other Software: None



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Node Description: ThinkSystem SR950

Hardware (Continued)

Ports Used: 0
Interconnect Type: None

Interconnect Description: N/A

Hardware

Vendor: N/A
Model: N/A
Switch Model: N/A
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.
submit = mpirun -host localhost -genv coll_hcoll_enable 1 -genv HCOLL_MAIN_IB=mlx5_0:1
-genv UCX_TLS=sm -genv pml ucx --map-by numa -np \$ranks \$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) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 2021.2.0 Build 20210228_000000
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.
=====

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

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 2021.2.0 Build 20210228_000000
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Compiler Version Notes (Continued)

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

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 2021.2.0 Build 20210228_000000
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Base Compiler Invocation

C benchmarks:
mpiicc

C++ benchmarks:
mpiicpc

Fortran benchmarks:
mpiifort

Base Portability Flags

613.soma_s: -DSPEC_NO_VAR_ARRAY_REDUCE

Base Optimization Flags

C benchmarks:
-Ofast -xCORE-AVX512 -no-prec-div -ipo -qopenmp -ansi-alias

C++ benchmarks:
-Ofast -xCORE-AVX512 -no-prec-div -ipo -qopenmp -ansi-alias

Fortran benchmarks:
-Ofast -xCORE-AVX512 -no-prec-div -ipo -qopenmp

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2021-10-20.html

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2021-10-20.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 v1.0.1 on 2020-08-26 08:39:23-0400.
Report generated on 2021-10-20 15:39:24 by hpc2021 PDF formatter v1.0.3.
Originally published on 2021-10-20.