



SPEChpc™ 2021 Small Result

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Lenovo Global Technology

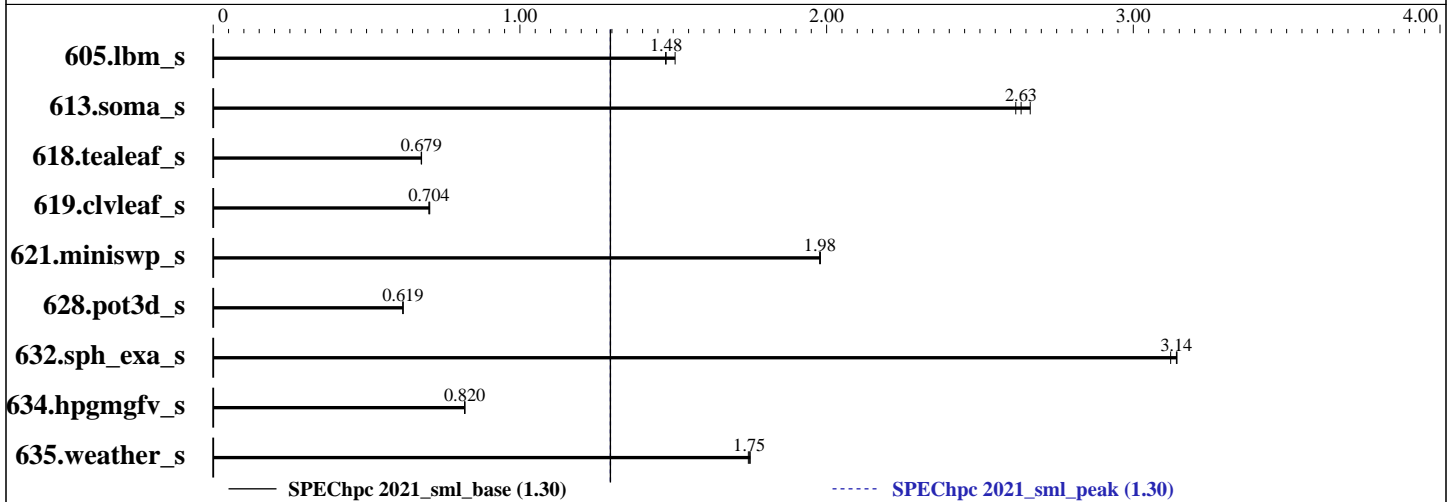
SPEChpc 2021_sml_base = 1.30

ThinkSystem SR655 V3 (AMD EPYC 9654P)

SPEChpc 2021_sml_peak = 1.30

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

Test Date: Jan-2023
Hardware Availability: Feb-2023
Software Availability: Feb-2023



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	24	16	1051	1.48	1050	1.48	1029	1.51	OMP	24	16	1051	1.48	1050	1.48	1029	1.51
613.soma_s	OMP	24	16	607	2.63	611	2.62	601	2.66	OMP	24	16	607	2.63	611	2.62	601	2.66
618.tealeaf_s	OMP	24	16	3021	0.679	3017	0.679	3021	0.679	OMP	24	16	3021	0.679	3017	0.679	3021	0.679
619.clvleaf_s	OMP	24	16	2344	0.704	2337	0.706	2345	0.704	OMP	24	16	2344	0.704	2337	0.706	2345	0.704
621.miniswp_s	OMP	24	16	556	1.98	556	1.98	556	1.98	OMP	24	16	556	1.98	556	1.98	556	1.98
628.pot3d_s	OMP	24	16	2706	0.619	2709	0.618	2706	0.619	OMP	24	16	2706	0.619	2709	0.618	2706	0.619
632.sph_exa_s	OMP	24	16	737	3.12	732	3.14	732	3.14	OMP	24	16	737	3.12	732	3.14	732	3.14
634.hpgmgfv_s	OMP	24	16	1188	0.821	1190	0.819	1189	0.820	OMP	24	16	1188	0.821	1190	0.819	1189	0.820
635.weather_s	OMP	24	16	1487	1.75	1485	1.75	1490	1.74	OMP	24	16	1487	1.75	1485	1.75	1490	1.74

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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: Homogeneous Cluster
Compute Node: ThinkSystem SR655 V3
Interconnect: -
Compute Nodes Used: 2
Total Chips: 2
Total Cores: 192
Total Threads: 384
Total Memory: 1536 GB
Max. Peak Threads: 16

Software Summary

Compiler: Intel oneAPI Compiler 2022.1.0
MPI Library: Intel MPI Library for Linux OS, Build 20220227
Other MPI Info: --
Other Software: --
Base Parallel Model: OMP
Base Ranks Run: 24
Base Threads Run: 16
Peak Parallel Models: OMP
Minimum Peak Ranks: 24
Maximum Peak Ranks: 24
Max. Peak Threads: 16
Min. Peak Threads: 16

Node Description: ThinkSystem SR655 V3

Hardware

Number of nodes: 2
Uses of the node: Compute
Vendor: Lenovo Global Technology
Model: ThinkSystem SR655 V3
CPU Name: AMD EPYC 9654P
CPU(s) orderable: 1 chips
Chips enabled: 1
Cores enabled: 96
Cores per chip: 96
Threads per core: 2
CPU Characteristics: Max Boost Clock up to 3.7 GHz
CPU MHz: 2400
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 384 MB I+D on chip per chip
32 MB shared / 8 cores
Other Cache: None
Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
Disk Subsystem: 1x ThinkSystem 2.5" 5300 480GB SSD
Other Hardware: None
Accel Count: --
Accel Model: --
Accel Vendor: --
Accel Type: --
Accel Connection: --
Accel ECC enabled: --
Accel Description: --
Adapter: -
Number of Adapters: 0
Slot Type: -
Data Rate: None
Ports Used: 0

Software

Accelerator Driver: --
Adapter: -
Adapter Driver: -
Adapter Firmware: -
Operating System: --
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 SR655 V3

Hardware (Continued)

Interconnect Type: -

Interconnect Description: -

Hardware

Vendor: None
Model: -
Switch Model: None
Number of Switches: 0
Number of Ports: 0
Data Rate: None
Firmware: N/A
Topology: N/A
Primary Use: -

Software

: --

Submit Notes

The config file option 'submit' was used.

Compiler Version Notes

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

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
ifx: command line error: no files specified; for help type "ifx -help"

=====
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 for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
clang: warning: -Z-reserved-lib-stdc++: 'linker' input unused
[-Wunused-command-line-argument]

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Compiler Version Notes (Continued)

CXXC 632.sph_exa_s(base)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
clang: warning: -Z-reserved-lib-stdc++: 'linker' input unused
[-Wunused-command-line-argument]

Base Compiler Invocation

C benchmarks:

mpiicc -cc=icx

C++ benchmarks:

mpiicpc -cxx=icx

Fortran benchmarks:

mpiifort -fc=ifx

Base Portability Flags

605.lbm_s: -lstdc++
613.soma_s: -lstdc++ -DSPEC_NO_VAR_ARRAY_REDUCE
618.tealeaf_s: -lstdc++
619.clvleaf_s: -lstdc++
621.miniswp_s: -lstdc++
628.pot3d_s: -lstdc++
632.sph_exa_s: -lstdc++
634.hpgmgfv_s: -lstdc++
635.weather_s: -lstdc++

Base Optimization Flags

C benchmarks:

-Ofast -mprefer-vector-width=512 -march=core-avx2 -ipo -fiopenmp
-ansi-alias

C++ benchmarks:

-Ofast -mprefer-vector-width=512 -march=core-avx2 -ipo -fiopenmp
-ansi-alias

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Base Optimization Flags (Continued)

Fortran benchmarks:

-Ofast -mprefer-vector-width=512 -march=core-avx2 -ipo -fiopenmp
-nostandard-realloc-lhs -align array64byte

Base Other Flags

C benchmarks:

-Ispecmpitime

C++ benchmarks:

-Ispecmpitime

Fortran benchmarks:

619.clvleaf_s: -Ispecmpitime

Peak Optimization Flags

C benchmarks:

605.lbm_s: basepeak = yes

613.soma_s: basepeak = yes

618.tealeaf_s: basepeak = yes

621.miniswp_s: basepeak = yes

634.hpgmgfv_s: basepeak = yes

C++ benchmarks:

632.sph_exa_s: basepeak = yes

Fortran benchmarks:

619.clvleaf_s: basepeak = yes

628.pot3d_s: basepeak = yes

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Peak Optimization Flags (Continued)

635.weather_s:basepeak = yes

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2022-11-10.html

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2022-11-10.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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