



SPEChpc™ 2021 Small Result

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Bull

(Test Sponsor: Technische Universitaet Dresden)

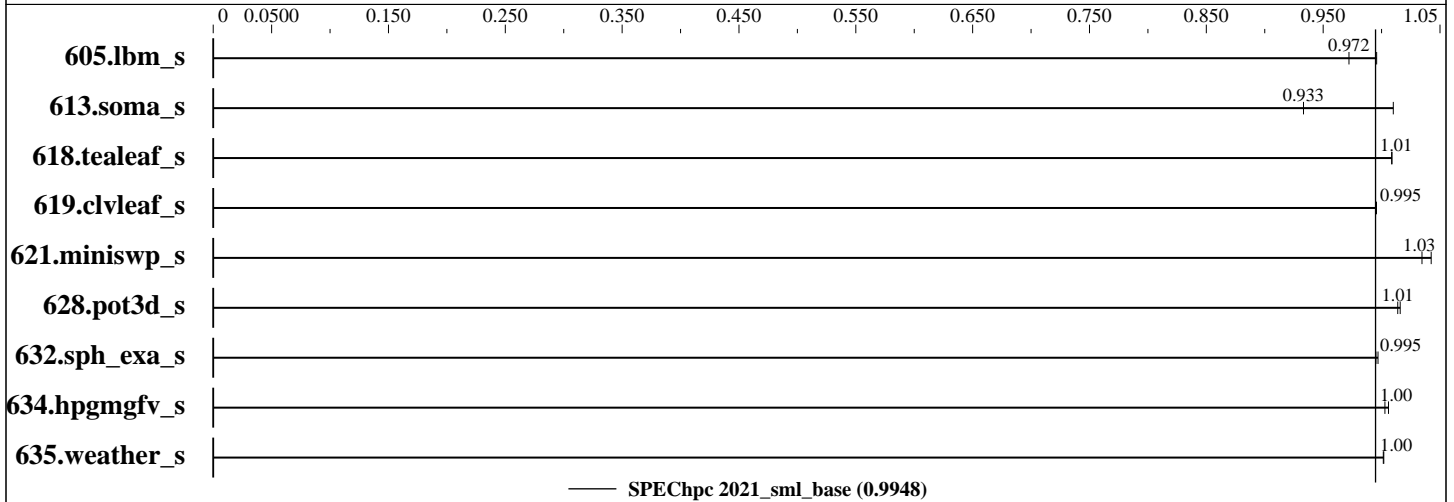
SPEChpc 2021_sml_base = 0.9948

Taurus: bullx DLC B720 (Intel Xeon E5-2680 v3)

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: 37A
Test Sponsor: Technische Universitaet Dresden
Tested by: Technische Universitaet Dresden

Test Date: Sep-2021
Hardware Availability: Jan-2015
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	MPI	240	1	1557	0.996	1595	0.972											
613.soma_s	MPI	240	1	1584	1.01	1715	0.933											
618.tealeaf_s	MPI	240	1	2033	1.01	2032	1.01											
619.clvleaf_s	MPI	240	1	1657	0.996	1658	0.995											
621.miniswp_s	MPI	240	1	1055	1.04	1063	1.03											
628.pot3d_s	MPI	240	1	1649	1.02	1652	1.01											
632.sph_exa_s	MPI	240	1	2311	0.995	2307	0.997											
634.hpgmgfv_s	MPI	240	1	972	1.00	969	1.01											
635.weather_s	MPI	240	1	2596	1.00	2595	1.00											

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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 Cluster
Compute Node: Taurus Compute Node (Haswell)
Interconnect: InfiniBand
Compute Nodes Used: 10
Total Chips: 20
Total Cores: 240
Total Threads: 240
Total Memory: 640 GB
Max. Peak Threads: --

Software Summary

Compiler: C/C++/Fortran: Version 8.2.0 of GNU Compilers
MPI Library: OpenMPI Version 3.1.3
Other MPI Info: None
Other Software: None
Base Parallel Model: MPI
Base Ranks Run: 240
Base Threads Run: 1
Peak Parallel Models: Not Run
Minimum Peak Ranks: --
Maximum Peak Ranks: --
Max. Peak Threads: --
Min. Peak Threads: --

Node Description: Taurus Compute Node (Haswell)

Hardware

Number of nodes: 10
Uses of the node: compute
Vendor: Bull
Model: bullx DLC B720
CPU Name: Intel Xeon E5-2680 v3
CPU(s) orderable: 1,2 chips
Chips enabled: 2
Cores enabled: 24
Cores per chip: 12
Threads per core: 1
CPU Characteristics: Intel Turbo Boost Technology disabled
CPU MHz: 2500
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (8 x 8 GB 2Rx8 PC4-2133R-10)
Disk Subsystem: Micron M510 128GB SSD SATA 6 Gb/s
Other Hardware: None
Accel Count: --
Accel Model: --
Accel Vendor: --
Accel Type: --
Accel Connection: --
Accel ECC enabled: --
Accel Description: --
Adapter: Mellanox Technologies MT27600 (MCB193A-FCAT)
Number of Adapters: 1
Slot Type: PCIe 3.0 x16
Data Rate: 56 Gb/s
Ports Used: 1

Software

Accelerator Driver: --
Adapter: Mellanox Technologies MT27600 (MCB193A-FCAT)
Adapter Driver: mlx5_core
Adapter Firmware: 10.16.1200
Operating System: Red Hat Enterprise Linux Server 7.9 (Maipo)
3.10.0-1127.19.1.el7.x86_64
Local File System: ext4
Shared File System: 4 PB Lustre over Infiniband FDR (56 Gb/s)
System State: Multi-user, run level 3
Other Software: None

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Node Description: Taurus Compute Node (Haswell)

Hardware (Continued)

Interconnect Type: InfiniBand

Interconnect Description: InfiniBand

Hardware

Vendor: Mellanox Technologies
Model: Mellanox InfiniBand FDR
Switch Model: SX6025 (36), SX6512 (216)
Number of Switches: 17
Number of Ports: 36
Data Rate: 56 Gb/s
Firmware: 9.4.2000, 9.4.5070
Topology: FatTree
Primary Use: MPI Traffic and File System

Software

: --

Submit Notes

The config file option 'submit' was used.
srun -n \$ranks -c \$threads \$command

General Notes

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC HPG Policy document, <http://www.spec.org/hpg/policy.html>

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

Compiler Version Notes

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

GNU Fortran (GCC) 8.2.0

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Compiler Version Notes (Continued)

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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

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

g++ (GCC) 8.2.0
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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

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

gcc (GCC) 8.2.0
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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

Base Compiler Invocation

C benchmarks:
mpicc

C++ benchmarks:
mpicxx

Fortran benchmarks:
mpif90

Base Portability Flags

619.clvleaf_s: -ffree-line-length-none
621.miniswp_s: -DUSE_KBA -DUSE_ACCELDIR
628.pot3d_s: -ffree-line-length-none
632.sph_exa_s: -DSPEC_USE_LT_IN_KERNELS
635.weather_s: -ffree-line-length-none



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Base Optimization Flags

C benchmarks:

`-Ofast -march=native`

C++ benchmarks:

`-Ofast -march=native -std=c++14`

Fortran benchmarks:

`-Ofast -march=native -fno-stack-protector`

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

<http://www.spec.org/hpc2021/flags/gcc.html>

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

<http://www.spec.org/hpc2021/flags/gcc.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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