SPEChpc™ 2021 Large Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

Bull

(Test Sponsor: Technische Universitaet Dresden)

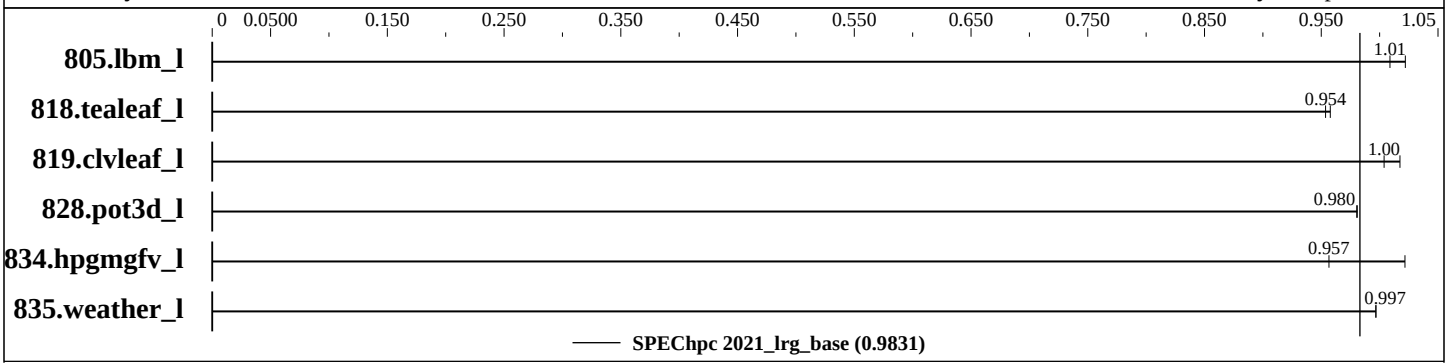
Taurus: bullx DLC B720 (Intel Xeon E5-2680 v3)

SPEChpc 2021_lrg_base = 0.9831

SPEChpc 2021_lrg_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
805.lbm_l	MPI	7200	1	**2701**	**1.01**	2666	1.02											
818.tealeaf_l	MPI	7200	1	**1520**	**0.954**	1514	0.958											
819.clvleaf_l	MPI	7200	1	**2092**	**1.00**	2064	1.02											
828.pot3d_l	MPI	7200	1	4639	0.981	**4641**	**0.980**											
834.hpgmgfv_l	MPI	7200	1	**3502**	**0.957**	3279	1.02											
835.weather_l	MPI	7200	1	3436	0.997	**3436**	**0.997**											

SPEChpc 2021_lrg_base = 0.9831

SPEChpc 2021_lrg_peak = Not Run

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

SPEChpc™ 2021 Large Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

Bull

(Test Sponsor: Technische Universitaet Dresden)

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

SPEChpc 2021_lrg_base = 0.9831

SPEChpc 2021_lrg_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

Hardware Summary

Type of System:	Homogenous Cluster
Compute Node:	Taurus Compute Node (Haswell)
Interconnect:	InfiniBand
Compute Nodes Used:	300
Total Chips:	600
Total Cores:	7200
Total Threads:	7200
Total Memory:	19200 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:	7200
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:	300
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

(Continued on next page)

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

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  819.clvleaf_l(base) 828.pot3d_l(base) 835.weather_l(base)
------------------------------------------------------------------------------
GNU Fortran (GCC) 8.2.0
```

(Continued on next page)

Compiler Version Notes (Continued)

```
Copyright (C) 2018 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
------------------------------------------------------------------------------

==============================================================================
 CC  805.lbm_l(base) 818.tealeaf_l(base) 834.hpgmgfv_l(base)
------------------------------------------------------------------------------
gcc (GCC) 8.2.0
Copyright (C) 2018 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`mpicc`

Fortran benchmarks:
`mpif90`

Base Portability Flags

819.clvleaf_l: `-ffree-line-length-none`
828.pot3d_l: `-ffree-line-length-none`
835.weather_l: `-ffree-line-length-none`

Base Optimization Flags

C benchmarks:
`-Ofast -march=native`

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`

SPEChpc is a trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEChpc2021 v1.0.2 on 2021-09-15 05:09:32-0400.
Report generated on 2023-08-25 18:58:30 by hpc2021 PS formatter v1.0.3.
Originally published on 2021-10-20.