SPEChpc™ 2021 Small Result

Copyright 2021-2024 Standard Performance Evaluation Corporation

Supermicro

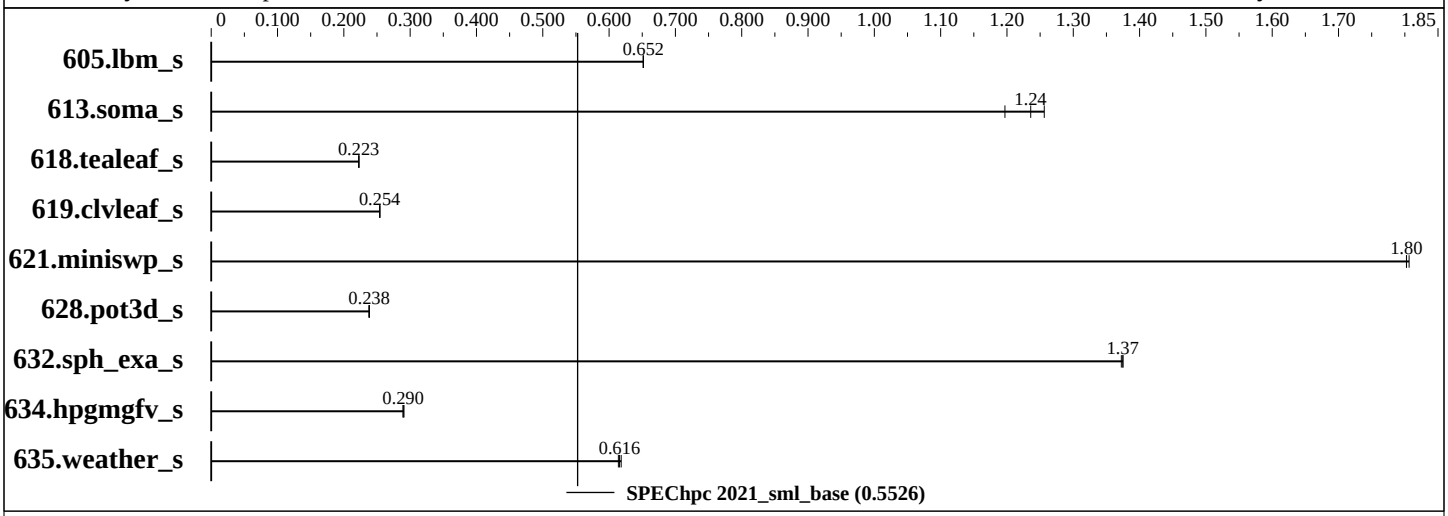
UP SuperServer SYS-521C-NR (Intel Xeon Platinum 8592+)

SPEChpc 2021_sml_base = 0.5526

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: 6569
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Dec-2023
Hardware Availability: Dec-2023
Software Availability: Oct-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	2	128	**2378**	**0.652**	2380	0.651	2378	0.652									
613.soma_s	OMP	2	128	**1295**	**1.24**	1274	1.26	1337	1.20									
618.tealeaf_s	OMP	2	128	9199	0.223	**9212**	**0.223**	9213	0.223									
619.clvleaf_s	OMP	2	128	6490	0.254	6491	0.254	**6490**	**0.254**									
621.miniswp_s	OMP	2	128	609	1.81	610	1.80	**610**	**1.80**									
628.pot3d_s	OMP	2	128	7019	0.239	**7026**	**0.238**	7044	0.238									
632.sph_exa_s	OMP	2	128	1676	1.37	**1673**	**1.37**	1673	1.37									
634.hpgmgfv_s	OMP	2	128	3371	0.289	3354	0.291	**3366**	**0.290**									
635.weather_s	OMP	2	128	**4222**	**0.616**	4205	0.618	4235	0.614									

SPEChpc 2021_sml_base = 0.5526

SPEChpc 2021_sml_peak = Not Run

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

SPEChpc™ 2021 Small Result

Copyright 2021-2024 Standard Performance Evaluation Corporation

Supermicro

UP SuperServer SYS-521C-NR (Intel Xeon Platinum 8592+)

SPEChpc 2021_sml_base = 0.5526

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: 6569
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Dec-2023
Hardware Availability: Dec-2023
Software Availability: Oct-2023

Hardware Summary

Type of System:	Homogenous
Compute Node:	UP SuperServer SYS-521C-NR
Interconnect:	None
Compute Nodes Used:	1
Total Chips:	1
Total Cores:	64
Total Threads:	128
Total Memory:	512 GB
Max. Peak Threads:	--

Software Summary

Compiler:	C/C++/Fortran: Version 2024.0.0 of Intel oneAPI Compiler
MPI Library:	Intel MPI Library for Linux* OS, Version 2021.11 Build 20231005
Other MPI Info:	None
Other Software:	None
Base Parallel Model:	OMP
Base Ranks Run:	2
Base Threads Run:	128
Peak Parallel Models:	Not Run
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--
Max. Peak Threads:	--
Min. Peak Threads:	--

Node Description: UP SuperServer SYS-521C-NR

Hardware

Number of nodes:	1
Uses of the node:	compute
Vendor:	Supermicro
Model:	UP SuperServer SYS-521C-NR
CPU Name:	Intel Xeon Platinum 8592+
CPU(s) orderable:	1 chip
Chips enabled:	1
Cores enabled:	64
Cores per chip:	64
Threads per core:	2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.9 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:	320 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (8 x 64 GB 2Rx4 PC5-5600B-R)
Disk Subsystem:	1 x 240 GB SATA 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

(Continued on next page)

Software

Accelerator Driver:	--
Adapter:	None
Adapter Driver:	None
Adapter Firmware:	None
Operating System:	SUSE Linux Enterprise Server 15 SP5 Kernel 5.14.21-150500.53-default
Local File System:	xfs
Shared File System:	None
System State:	Multi-user, run level 3
Other Software:	None

Node Description: UP SuperServer SYS-521C-NR

Hardware (Continued)

Ports Used: 0
Interconnect Type: None

Interconnect Description: None

Hardware

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

Software

: --

Submit Notes

```
The config file option 'submit' was used.
```

General Notes

```
MPI startup command:
  mpirun command (mpiexec.hydra) was used to start MPI jobs.
```

Compiler Version Notes

```
==============================================================================
 CXXC 632.sph_exa_s(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler 2024.0.0 (2024.0.0.20231017)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2024.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2024.0/bin/compiler/../icpx.cfg
------------------------------------------------------------------------------

==============================================================================
 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 2024.0.0 (2024.0.0.20231017)
```

(Continued on next page)

Compiler Version Notes (Continued)

```
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/intel/oneapi/compiler/2024.0/bin/compiler
Configuration file: /opt/intel/oneapi/compiler/2024.0/bin/compiler/../icx.cfg
------------------------------------------------------------------------------

==============================================================================
 FC  619.clvleaf_s(base) 635.weather_s(base)
------------------------------------------------------------------------------
ifx (IFX) 2024.0.0 20231017
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
 FC  628.pot3d_s(base)
------------------------------------------------------------------------------
ifx: command line warning #10157: ignoring option '-W'; argument is of wrong
  type
ifx (IFX) 2024.0.0 20231017
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`mpiicc -cc=icx`

C++ benchmarks:
`mpiicpc -cxx=icpx`

Fortran benchmarks:
`mpiifort -fc=ifx`

Base Portability Flags

605.lbm_s: `-lstdc++`
613.soma_s: `-lstdc++`
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++`

(Continued on next page)

Base Portability Flags (Continued)

635.weather_s: `-lstdc++`

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`

Base Other Flags

Fortran benchmarks:

628.pot3d_s: `-Wno-incompatible-function-pointer-types`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2023-06-05.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2023-06-05.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 v1.1.8 on 2023-11-30 20:29:46-0500.
Report generated on 2024-01-03 17:49:36 by hpc2021 PS formatter v1.0.3.
Originally published on 2024-01-03.