SPEChpc™ 2021 Small Result

Cray
(Test Sponsor: University of Bristol)

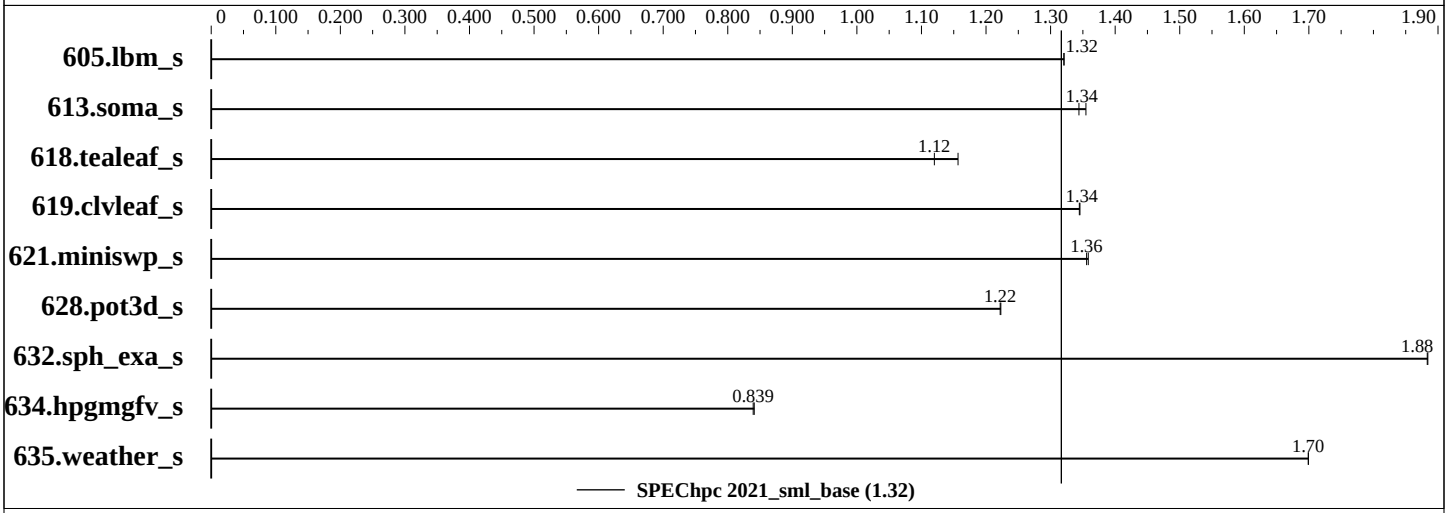
Isambard 2: XC50 (ThunderX2)

SPEChpc 2021_sml_base = 1.32

SPEChpc 2021_sml_peak = Not Run

hpc2021 License: ?
Test Sponsor: University of Bristol
Tested by: University of Bristol

Test Date: Jun-2022
Hardware Availability: May-2018
Software Availability: Mar-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	512	1	1173	1.32	**1174**	**1.32**											
613.soma_s	MPI	512	1	1181	1.35	**1191**	**1.34**											
618.tealeaf_s	MPI	512	1	1772	1.16	**1830**	**1.12**											
619.clvleaf_s	MPI	512	1	**1227**	**1.34**	1226	1.35											
621.miniswp_s	MPI	512	1	810	1.36	**811**	**1.36**											
628.pot3d_s	MPI	512	1	**1371**	**1.22**	1370	1.22											
632.sph_exa_s	MPI	512	1	**1221**	**1.88**	1221	1.88											
634.hpgmgfv_s	MPI	512	1	1159	0.841	**1162**	**0.839**											
635.weather_s	MPI	512	1	**1530**	**1.70**	1530	1.70											

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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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Software Availability: Mar-2020

Hardware Summary

Type of System:	Homogenous Cluster
Compute Node:	ThunderX2
Interconnect:	Cray Aries
Compute Nodes Used:	8
Total Chips:	16
Total Cores:	512
Total Threads:	2048
Total Memory:	2 TB
Max. Peak Threads:	--

Software Summary

Compiler:	HPE Cray Programming Environment (CPE), C/C++/Fortran: GCC Version 9.3.0
MPI Library:	HPE Cray Programming Environment (CPE), Cray-mvapich2 Version 2.3.6
Other MPI Info:	--
Other Software:	--
Base Parallel Model:	MPI
Base Ranks Run:	512
Base Threads Run:	1
Peak Parallel Models:	Not Run
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--
Max. Peak Threads:	--
Min. Peak Threads:	--

Node Description: ThunderX2

Hardware

Number of nodes:	8
Uses of the node:	Compute
Vendor:	N/A
Model:	N/A
CPU Name:	Marvell ThunderX2 CN9980
CPU(s) orderable:	N/A
Chips enabled:	2
Cores enabled:	64
Cores per chip:	32
Threads per core:	4
CPU Characteristics:	Permanent turbo to 2.5 GHz
CPU MHz:	2100
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	32 MB I+D on chip per chip 0.5 MB shared / 64 cores
Other Cache:	None
Memory:	256 GB (8 x 32 GB)
Disk Subsystem:	--
Other Hardware:	None
Accel Count:	N/A
Accel Model:	N/A
Accel Vendor:	N/A
Accel Type:	N/A
Accel Connection:	N/A
Accel ECC enabled:	N/A
Accel Description:	N/A
Adapter:	None
Number of Adapters:	0
Slot Type:	None

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Software

Accelerator Driver:	--
Adapter:	None
Adapter Driver:	None
Adapter Firmware:	None
Operating System:	SUSE Linux Enterprise Server 15 SP1 Linux 4.12.14-197.7_5.0.99-cray_ari_s
Local File System:	xfs
Shared File System:	None
System State:	Multi-user, run level 3
Other Software:	None

Node Description: ThunderX2

Hardware (Continued)

Data Rate:	None
Ports Used:	0
Interconnect Type:	None

Interconnect Description: Cray Aries

Hardware

Vendor:	Cray
Model:	N/A
Switch Model:	N/A
	N/A
Number of Switches:	N/A
Number of Ports:	N/A
Data Rate:	14 Gb/s
Firmware:	N/A
Topology:	Dragonfly
Primary Use:	MPI Traffic

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)
------------------------------------------------------------------------------
GNU Fortran (GCC) 9.3.0 20200312 (Cray Inc.)
Copyright (C) 2019 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.
------------------------------------------------------------------------------

==============================================================================
 CXXC 632.sph_exa_s(base)
------------------------------------------------------------------------------
g++ (GCC) 9.3.0 20200312 (Cray Inc.)
Copyright (C) 2019 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.
------------------------------------------------------------------------------
```

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Compiler Version Notes (Continued)

```
==============================================================================
 CC  605.lbm_s(base) 613.soma_s(base) 618.tealeaf_s(base) 621.miniswp_s(base)
     634.hpgmgfv_s(base)
------------------------------------------------------------------------------
gcc (GCC) 9.3.0 20200312 (Cray Inc.)
Copyright (C) 2019 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:
`cc`

C++ benchmarks:
`CC`

Fortran benchmarks:
`ftn`

Base Optimization Flags

C benchmarks:
`-Ofast`

C++ benchmarks:
`-Ofast`

Fortran benchmarks:
`-Ofast`

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

Tested with SPEChpc2021 v1.0.3 on 2022-06-30 15:30:08+0000.
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