

SPEChpc™ 2021 Tiny Result

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Cray

(Test Sponsor: University of Bristol)

SPEChpc 2021_tny_base = 2.98

Isambard 2: XC50 (ThunderX2)

SPEChpc 2021_tny_peak = Not Run

hpc2021 License: ?

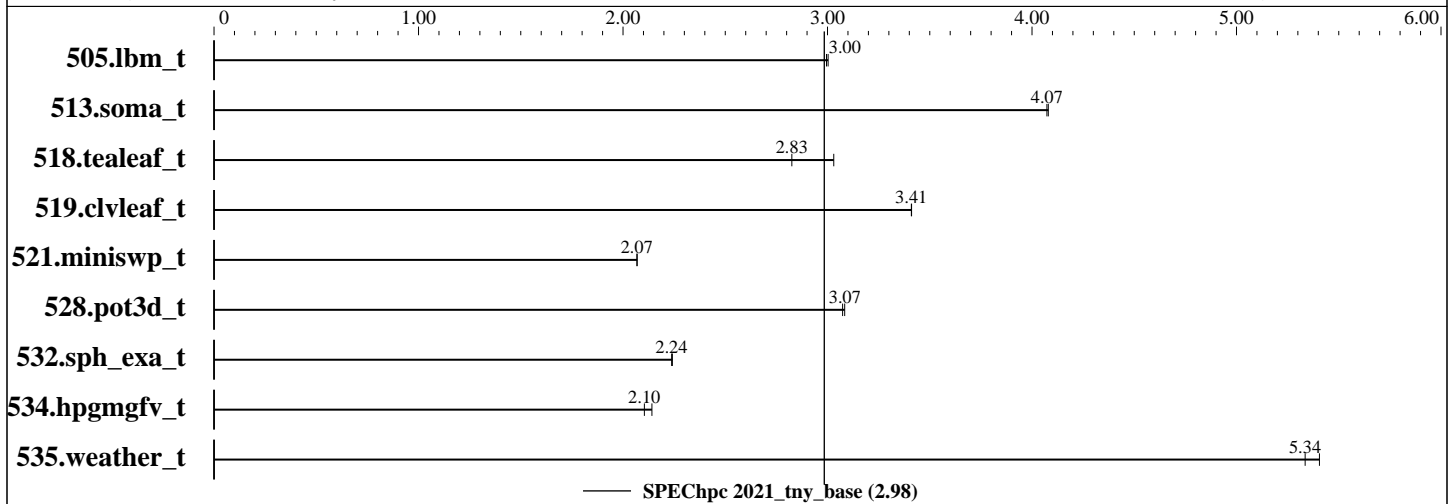
Test Sponsor: University of Bristol

Tested by: University of Bristol

Test Date: Jul-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
505.lbm_t	MPI	128	1	749	3.00	<u>751</u>	<u>3.00</u>											
513.soma_t	MPI	128	1	907	4.08	<u>908</u>	<u>4.07</u>											
518.tealeaf_t	MPI	128	1	<u>584</u>	<u>2.83</u>	544	3.03											
519.clvleaf_t	MPI	128	1	484	3.41	<u>484</u>	<u>3.41</u>											
521.miniswp_t	MPI	128	1	<u>774</u>	<u>2.07</u>	773	2.07											
528.pot3d_t	MPI	128	1	689	3.08	<u>691</u>	<u>3.07</u>											
532.sph_exa_t	MPI	128	1	<u>871</u>	<u>2.24</u>	870	2.24											
534.hpgmgfv_t	MPI	128	1	549	2.14	<u>558</u>	<u>2.10</u>											
535.weather_t	MPI	128	1	597	5.41	<u>604</u>	<u>5.34</u>											

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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: ThunderX2
Interconnect: Cray Aries
Compute Nodes Used: 2
Total Chips: 4
Total Cores: 128
Total Threads: 512
Total Memory: 512 GB
Max. Peak Threads: --

Software Summary

Compiler: HPE Cray Programming Environment (CPE),
C/C++/Fortran: Arm version 20.0 (based on LLVM 9.0.1)
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: 128
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: 2
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

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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
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

```
=====
CC 505.lbm_t(base) 513.soma_t(base) 518.tealeaf_t(base) 521.miniswp_t(base)
   534.hpgmgfv_t(base)
=====
```

```
-----
Arm C/C++/Fortran Compiler version 20.0 (build number 51) (based on LLVM
9.0.1)
Target: aarch64-unknown-linux-gnu
Thread model: posix
InstalledDir:
/opt/allinea/20.0.0.0/arm-linux-compiler-20.0_Generic-AArch64_SUSE-12_aarch64-linux/bin
=====
```

```
=====
CXXC 532.sph_exa_t(base)
=====
```

```
-----
Arm C/C++/Fortran Compiler version 20.0 (build number 51) (based on LLVM
9.0.1)
Target: aarch64-unknown-linux-gnu
=====
```

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Compiler Version Notes (Continued)

Thread model: posix

InstalledDir:

/opt/allinea/20.0.0.0/arm-linux-compiler-20.0_Generic-AArch64_SUSE-12_aarch64-linux/bin

=====

FC 519.clvleaf_t(base) 528.pot3d_t(base) 535.weather_t(base)

Arm C/C++/Fortran Compiler version 20.0 (build number 51) (based on LLVM 9.0.1)

Target: aarch64-unknown-linux-gnu

Thread model: posix

InstalledDir:

/opt/allinea/20.0.0.0/arm-linux-compiler-20.0_Generic-AArch64_SUSE-12_aarch64-linux/bin

Base Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

ftn

Base Optimization Flags

C benchmarks:

-Ofast

C++ benchmarks:

-Ofast

Fortran benchmarks:

-Ofast

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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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