

# SPEChpc™ 2021 Tiny Result

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**Cray**

(Test Sponsor: University of Bristol)

SPEChpc 2021\_tny\_base = 9.51

**Isambard 2: XC50 (ThunderX2)**

SPEChpc 2021\_tny\_peak = Not Run

**hpc2021 License:** ?

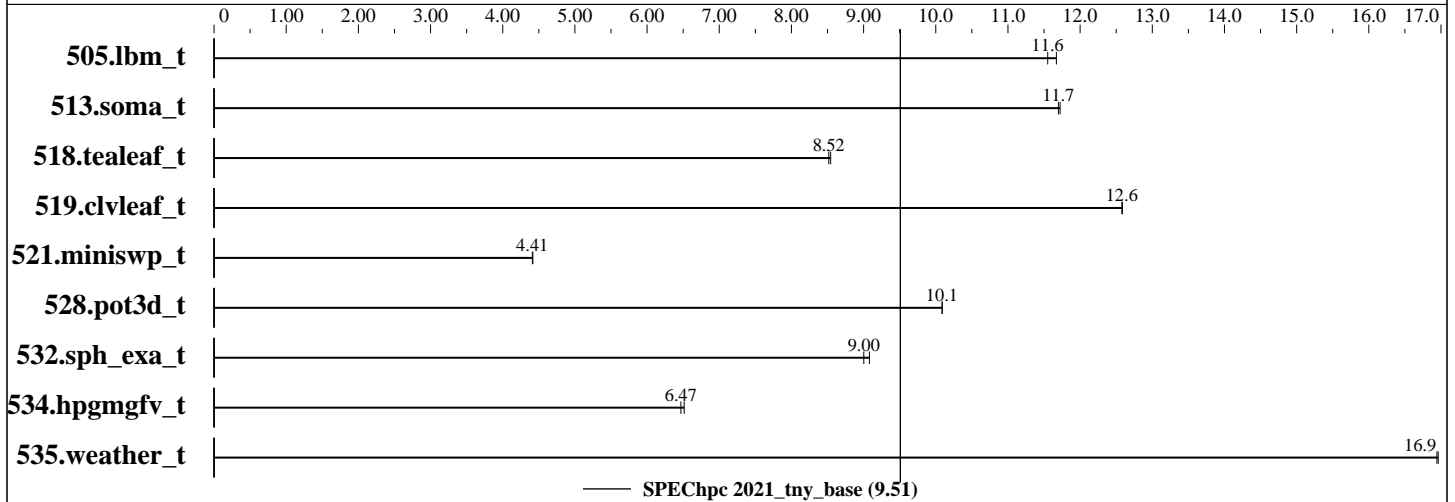
**Test Sponsor:** University of Bristol

**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
505.lbm_t	MPI	512	1	193	11.7	<b>195</b>	<b>11.6</b>									
513.soma_t	MPI	512	1	<b>316</b>	<b>11.7</b>	316	11.7									
518.tealeaf_t	MPI	512	1	<b>194</b>	<b>8.52</b>	193	8.54									
519.clvleaf_t	MPI	512	1	<b>131</b>	<b>12.6</b>	131	12.6									
521.miniswp_t	MPI	512	1	362	4.42	<b>363</b>	<b>4.41</b>									
528.pot3d_t	MPI	512	1	211	10.1	<b>211</b>	<b>10.1</b>									
532.sph_exa_t	MPI	512	1	215	9.08	<b>217</b>	<b>9.00</b>									
534.hpgmgfv_t	MPI	512	1	<b>182</b>	<b>6.47</b>	180	6.51									
535.weather_t	MPI	512	1	190	17.0	<b>190</b>	<b>16.9</b>									

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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: 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: Cray clang version 11.0.4  
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

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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

=====  
FC 519.clvleaf\_t(base) 528.pot3d\_t(base) 535.weather\_t(base)  
-----

Cray Fortran : Version 11.0.4  
-----

=====  
CC 505.lbm\_t(base) 513.soma\_t(base) 518.tealeaf\_t(base) 521.miniswp\_t(base)  
534.hpgmgfv\_t(base)  
-----

Cray clang version 11.0.4 (bc9473a12d1f2f43cde01f962a11240263bd8908)  
Target: aarch64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/cray/pe/cce/11.0.4/cce-clang/aarch64/share/.../bin  
-----

=====  
CXXC 532.sph\_exa\_t(base)  
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InstalledDir: /opt/cray/pe/cce/11.0.4/cce-clang/aarch64/share/../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](mailto:info@spec.org).

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