



# SPEChpc™ 2021 Tiny Result

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## Lenovo Global Technology

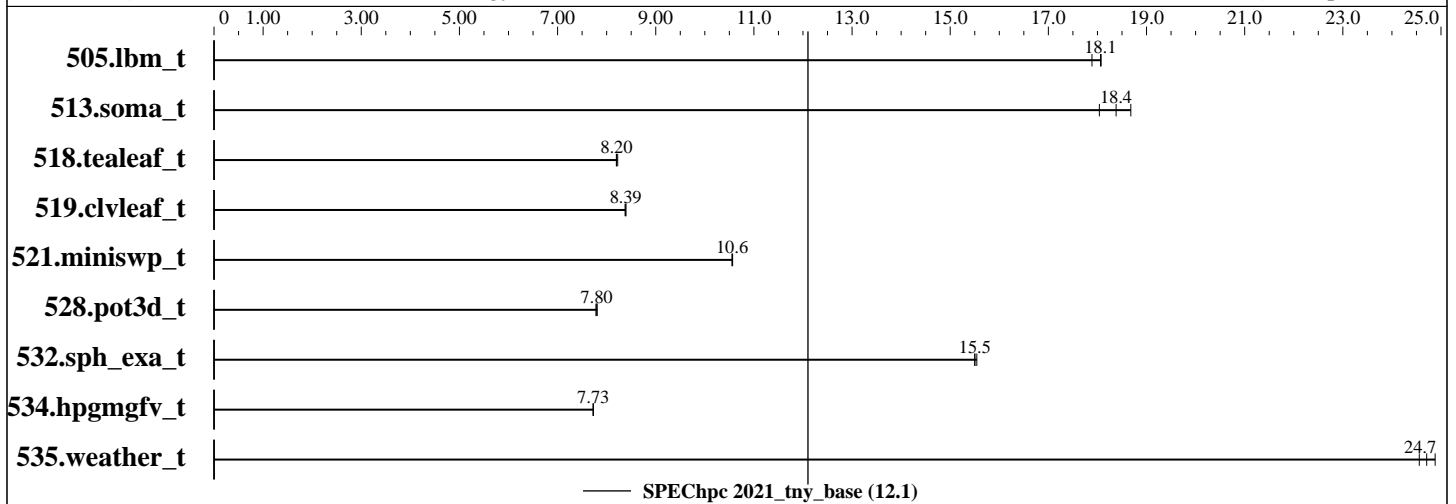
SPEChpc 2021\_tny\_base = 12.1

## ThinkSystem SR950 (Intel Xeon Platinum 8280L)

SPEChpc 2021\_tny\_peak = Not Run

**hpc2021 License:** 28  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology

**Test Date:** Aug-2021  
**Hardware Availability:** Apr-2019  
**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
505.lbm_t	OMP	32	7	126	17.9	124	18.1	<u>125</u>	<u>18.1</u>									
513.soma_t	OMP	32	7	<u>201</u>	<u>18.4</u>	205	18.0	198	18.7									
518.tealeaf_t	OMP	32	7	201	8.20	201	8.22	<u>201</u>	<u>8.20</u>									
519.clvleaf_t	OMP	32	7	197	8.39	<u>197</u>	<u>8.39</u>	197	8.38									
521.miniswp_t	OMP	32	7	152	10.6	<u>152</u>	<u>10.6</u>	151	10.6									
528.pot3d_t	OMP	32	7	273	7.78	272	7.81	<u>273</u>	<u>7.80</u>									
532.sph_exa_t	OMP	32	7	125	15.5	126	15.5	<u>126</u>	<u>15.5</u>									
534.hpgmgfv_t	OMP	32	7	<u>152</u>	<u>7.73</u>	152	7.73	152	7.72									
535.weather_t	OMP	32	7	131	24.6	<u>131</u>	<u>24.7</u>	130	24.9									

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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  
Compute Node: ThinkSystem SR950  
Interconnect: N/A  
Compute Nodes Used: 1  
Total Chips: 8  
Total Cores: 224  
Total Threads: 224  
Total Memory: 1536 GB  
Max. Peak Threads: --

### Software Summary

Compiler: Intel oneAPI C/C++/Fortran Compiler  
Version 2021.2.0 Build 20210228  
MPI Library: Intel oneAPI MPI Library for Linux\* OS  
Version 2020 Version 2021.2 Build 20210302  
Other MPI Info: --  
Other Software: --  
Base Parallel Model: OMP  
Base Ranks Run: 32  
Base Threads Run: 7  
Peak Parallel Models: Not Run  
Minimum Peak Ranks: --  
Maximum Peak Ranks: --  
Max. Peak Threads: --  
Min. Peak Threads: --

## Node Description: ThinkSystem SR950

### Hardware

Number of nodes: 1  
Uses of the node: compute  
Vendor: Lenovo Global Technology  
Model: ThinkSystem SR950  
CPU Name: Intel Xeon Platinum 8280L  
CPU(s) orderable: 2,3,4,6,8 chips  
Chips enabled: 8  
Cores enabled: 224  
Cores per chip: 28  
Threads per core: 1  
CPU Characteristics: Intel Turbo Boost Technology up to 4.0 GHz  
CPU MHz: 2700  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 1 MB I+D on chip per core  
L3 Cache: 39424 KB I+D on chip per chip  
Other Cache: None  
Memory: 1536 GB (96 x 16 GB 2Rx8 PC4-2933Y-R)  
Disk Subsystem: 1 x 960 GB NVME 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

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### Software

Accelerator Driver: --  
Adapter: None  
Adapter Driver: None  
Adapter Firmware: None  
Operating System: Red Hat Enterprise Linux Server release 7.6,  
Kernel 3.10.0-957.el7.x86\_64  
Local File System: xfs  
Shared File System: None  
System State: Multi-user, run level 3  
Other Software: None



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### Node Description: ThinkSystem SR950

#### Hardware (Continued)

Ports Used: 0  
Interconnect Type: None

### Interconnect Description: N/A

#### Hardware

Vendor: N/A  
Model: N/A  
Switch Model: N/A  
Number of Switches: 0  
Number of Ports: 0  
Data Rate: N/A  
Firmware: N/A  
Topology: N/A  
Primary Use: N/A

#### Software

: --

### Submit Notes

The config file option 'submit' was used.  
submit = mpirun -host localhost -genv coll\_hcoll\_enable 1 -genv HCOLL\_MAIN\_IB=mlx5\_0:1  
-genv UCX\_TLS=sm -genv pml ucx --map-by numa -np \$ranks \$command

### Compiler Version Notes

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

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 2021.2.0 Build 20210228\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.  
=====

=====  
CXXC 532.sph\_exa\_t(base)  
=====

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
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## Compiler Version Notes (Continued)

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

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Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 2021.2.0 Build 20210228\_000000  
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## Base Compiler Invocation

C benchmarks:  
mpiicc

C++ benchmarks:  
mpiicpc

Fortran benchmarks:  
mpiifort

## Base Portability Flags

513.soma\_t: -DSPEC\_NO\_VAR\_ARRAY\_REDUCE

## Base Optimization Flags

C benchmarks:  
-Ofast -xCORE-AVX512 -no-prec-div -ipo -qopenmp -ansi-alias

C++ benchmarks:  
-Ofast -xCORE-AVX512 -no-prec-div -ipo -qopenmp -ansi-alias

Fortran benchmarks:  
-Ofast -xCORE-AVX512 -no-prec-div -ipo -qopenmp

The flags file that was used to format this result can be browsed at

[http://www.spec.org/hpc2021/flags/Intel\\_compiler\\_flags.2021-10-20.html](http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2021-10-20.html)

You can also download the XML flags source by saving the following link:

[http://www.spec.org/hpc2021/flags/Intel\\_compiler\\_flags.2021-10-20.xml](http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2021-10-20.xml)



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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).

Tested with SPEChpc2021 v1.0.1 on 2020-08-26 05:48:58-0400.  
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