



SPEChpc™ 2021 Tiny Result

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Lenovo Global Technology

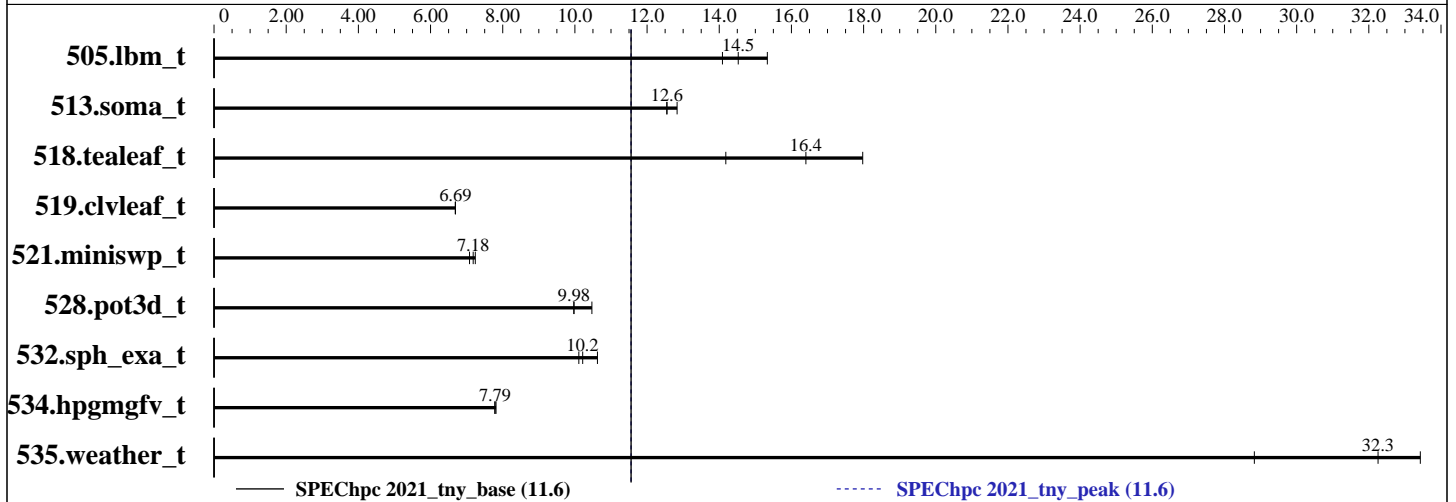
SPEChpc 2021_tny_base = 11.6

ThinkSystem SR665 V3 (AMD EPYC 9684X, 2.55 GHz)

SPEChpc 2021_tny_peak = 11.6

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

Test Date: Nov-2023
Hardware Availability: Dec-2023
Software Availability: Dec-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
505.lbm_t	MPI	192	1	160	14.1	155	14.5	147	15.3	MPI	192	1	160	14.1	155	14.5	147	15.3
513.soma_t	MPI	192	1	295	12.6	295	12.5	288	12.8	MPI	192	1	295	12.6	295	12.5	288	12.8
518.tealeaf_t	MPI	192	1	116	14.2	91.8	18.0	101	16.4	MPI	192	1	116	14.2	91.8	18.0	101	16.4
519.clvleaf_t	MPI	192	1	247	6.69	247	6.69	247	6.69	MPI	192	1	247	6.69	247	6.69	247	6.69
521.miniswp_t	MPI	192	1	226	7.08	221	7.24	223	7.18	MPI	192	1	226	7.08	221	7.24	223	7.18
528.pot3d_t	MPI	192	1	213	9.97	203	10.5	213	9.98	MPI	192	1	213	9.97	203	10.5	213	9.98
532.sph_exa_t	MPI	192	1	193	10.1	191	10.2	184	10.6	MPI	192	1	193	10.1	191	10.2	184	10.6
534.hpgmgfv_t	MPI	192	1	151	7.78	151	7.79	150	7.81	MPI	192	1	151	7.78	151	7.79	150	7.81
535.weather_t	MPI	192	1	112	28.8	100	32.3	96.5	33.4	MPI	192	1	112	28.8	100	32.3	96.5	33.4

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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: SMP
Compute Node: ThinkSystem SR665 V3
Compute Nodes Used: 1
Total Chips: 2
Total Cores: 192
Total Threads: 384
Total Memory: 768 GB
Max. Peak Threads: 1

Software Summary

Compiler: Intel oneAPI Compiler 2022.1.0
MPI Library: Intel MPI Library for Linux OS, Build 20220227
Other MPI Info: None
Other Software: None
Base Parallel Model: MPI
Base Ranks Run: 192
Base Threads Run: 1
Peak Parallel Models: MPI
Minimum Peak Ranks: 192
Maximum Peak Ranks: 192
Max. Peak Threads: 1
Min. Peak Threads: 1

Node Description: ThinkSystem SR665 V3

Hardware

Number of nodes: 1
Uses of the node: Compute
Vendor: Lenovo Global Technology
Model: ThinkSystem SR665 V3
CPU Name: AMD EPYC 9684X
CPU(s) orderable: 1,2 chips
Chips enabled: 2
Cores enabled: 192
Cores per chip: 96
Threads per core: 2
CPU Characteristics: Max Boost Clock up to 3.7 GHz
CPU MHz: 2550
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 384 MB I+D on chip per chip
32 MB shared / 8 cores
Other Cache: None
Memory: 768 GB (32 x 32 GB 2Rx8 PC5-4800V)
Disk Subsystem: 1x ThinkSystem 2.5" 480 GB SSD
Other Hardware: None
Accel Count: None
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
Ports Used: 0

Software

Accelerator Driver: None
Adapter: None
Adapter Driver: None
Adapter Firmware: None
Operating System: Red Hat Enterprise Linux Server release 8.6,
Kernel 4.18.0-372.9.1.el8.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 SR665 V3

Hardware (Continued)

Interconnect Type: None

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)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
ifx: command line error: no files specified; for help type "ifx -help"

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
clang: warning: -Z-reserved-lib-stdc++: 'linker' input unused
[-Wunused-command-line-argument]

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
clang: warning: -Z-reserved-lib-stdc++: 'linker' input unused
[-Wunused-command-line-argument]

Base Compiler Invocation

C benchmarks:
mpiicc -cc=icx

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Base Compiler Invocation (Continued)

C++ benchmarks:

```
mpiiCpc -cxx=icx
```

Fortran benchmarks:

```
mpiifort -fc=ifx
```

Base Portability Flags

```
505.lbm_t: -lstdc++  
513.soma_t: -lstdc++  
518.tealeaf_t: -lstdc++  
519.clvleaf_t: -lstdc++  
521.miniswp_t: -lstdc++  
528.pot3d_t: -lstdc++  
532.sph_exa_t: -lstdc++  
534.hpgmgfv_t: -lstdc++  
535.weather_t: -lstdc++
```

Base Optimization Flags

C benchmarks:

```
-Ofast -march=core-avx2 -ipo -ansi-alias
```

C++ benchmarks:

```
-Ofast -march=core-avx2 -ipo -ansi-alias
```

Fortran benchmarks:

```
-Ofast -march=core-avx2 -ipo -nostandard-realloc-lhs  
-align array64byte
```

Peak Optimization Flags

C benchmarks:

```
505.lbm_t: basepeak = yes
```

```
513.soma_t: basepeak = yes
```

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Peak Optimization Flags (Continued)

518.tealeaf_t: basepeak = yes

521.miniswp_t: basepeak = yes

534.hpgmgfv_t: basepeak = yes

C++ benchmarks:

532.sph_exa_t: basepeak = yes

Fortran benchmarks:

519.clvleaf_t: basepeak = yes

528.pot3d_t: basepeak = yes

535.weather_t: basepeak = yes

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2023-12-13.html

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2023-12-13.xml

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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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