



SPEChpc™ 2021 Tiny Result

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Lenovo Global Technology

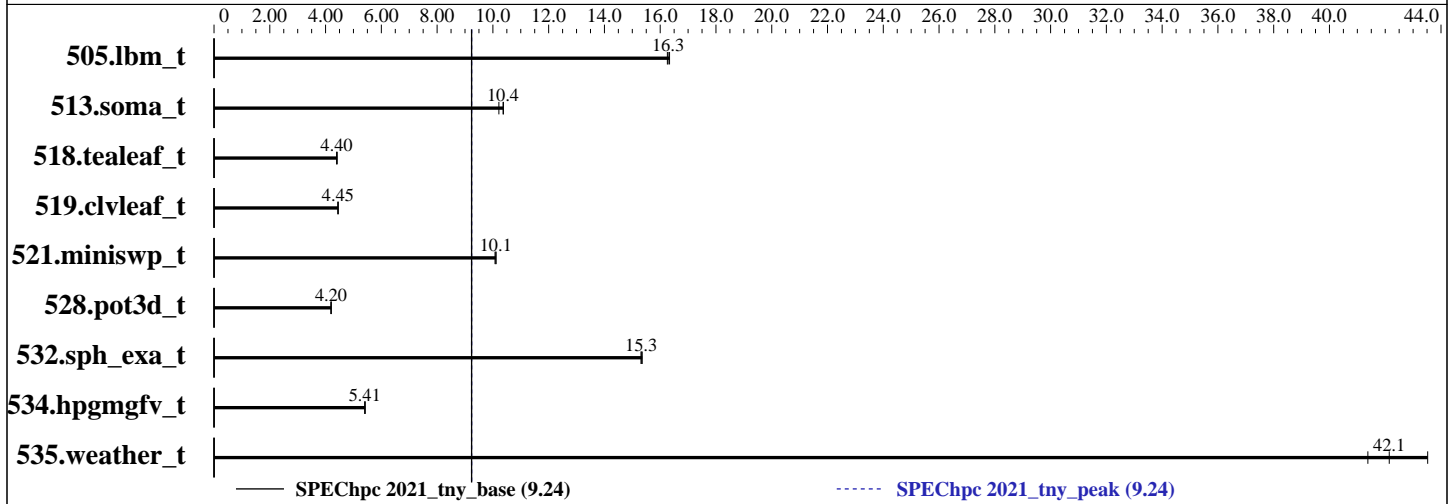
SPEChpc 2021_tny_base = 9.24

ThinkSystem SD535 V3 (AMD EPYC 9755)

SPEChpc 2021_tny_peak = 9.24

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

Test Date: Nov-2024
Hardware Availability: Feb-2025
Software Availability: Feb-2025



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	256	1	138	16.3	138	16.3	138	16.3	MPI	256	1	138	16.3	138	16.3	138	16.3
513.soma_t	MPI	256	1	362	10.2	356	10.4	357	10.4	MPI	256	1	362	10.2	356	10.4	357	10.4
518.tealeaf_t	MPI	256	1	374	4.41	375	4.40	375	4.40	MPI	256	1	374	4.41	375	4.40	375	4.40
519.clvleaf_t	MPI	256	1	371	4.45	371	4.45	371	4.45	MPI	256	1	371	4.45	371	4.45	371	4.45
521.miniswp_t	MPI	256	1	158	10.1	159	10.1	158	10.1	MPI	256	1	158	10.1	159	10.1	158	10.1
528.pot3d_t	MPI	256	1	506	4.20	506	4.20	506	4.20	MPI	256	1	506	4.20	506	4.20	506	4.20
532.sph_exa_t	MPI	256	1	127	15.4	127	15.3	127	15.3	MPI	256	1	127	15.4	127	15.3	127	15.3
534.hpgmgfv_t	MPI	256	1	217	5.42	217	5.41	217	5.41	MPI	256	1	217	5.42	217	5.41	217	5.41
535.weather_t	MPI	256	1	76.5	42.1	74.1	43.5	77.9	41.4	MPI	256	1	76.5	42.1	74.1	43.5	77.9	41.4

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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: Homogenous
Compute Node: ThinkSystem SD535 V3
Interconnect: -
Compute Nodes Used: 1
Total Chips: 1
Total Cores: 128
Total Threads: 256
Total Memory: 768 GB
Max. Peak Threads: 1

Software Summary

Compiler: Intel C/C++/Fortran Compiler 2024.2.1
MPI Library: Intel MPI Library for Linux OS, Build 20240701
Other MPI Info: --
Other Software: --
Base Parallel Model: MPI
Base Ranks Run: 256
Base Threads Run: 1
Peak Parallel Models: MPI
Minimum Peak Ranks: 256
Maximum Peak Ranks: 256
Max. Peak Threads: 1
Min. Peak Threads: 1

Node Description: ThinkSystem SD535 V3

Hardware

Number of nodes: 1
Uses of the node: Compute
Vendor: Lenovo Global Technology
Model: ThinkSystem SD535 V3
CPU Name: AMD EPYC 9755
CPU(s) orderable: 1 chips
Chips enabled: 1
Cores enabled: 128
Cores per chip: 128
Threads per core: 2
CPU Characteristics: Max Boost Clock up to 4.1 GHz
CPU MHz: 2700
Primary Cache: 32 KB I + 48 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 / 16 cores
Other Cache: None
Memory: 768 GB (12 x 64 GB 2Rx4 PC5-6400B-R), running at 6000
Disk Subsystem: 1x ThinkSystem 2.5" 5300 480GB SSD
Other Hardware: None
Accel Count: --
Accel Model: --
Accel Vendor: --
Accel Type: --
Accel Connection: --
Accel ECC enabled: --
Accel Description: --
Adapter: -
Number of Adapters: 0
Slot Type: -
Data Rate: None

Software

Accelerator Driver: --
Adapter: -
Adapter Driver: -
Adapter Firmware: -
Operating System: Ubuntu 24.04 LTS
Kernel 6.8.0-39-generic
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 SD535 V3

Hardware (Continued)

Ports Used: 0
Interconnect Type: -

Interconnect Description: -

Hardware

Vendor: None
Model: -
Switch Model: None
Number of Switches: 0
Number of Ports: 0
Data Rate: None
Firmware: N/A
Topology: N/A
Primary Use: -

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)
-----
```

```
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2024.2.1 Build 20240711
Copyright (C) 1985-2024 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 2024.2.1 Build 20240711
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
icx: warning: -Z-reserved-lib-stdc++: 'linker' input unused
[-Wunused-command-line-argument]
-----
```

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Compiler Version Notes (Continued)

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2024.2.1 Build 20240711
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
icx: warning: -Z-reserved-lib-stdc++: 'linker' input unused
[-Wunused-command-line-argument]
=====

Base Compiler Invocation

C benchmarks:
mpiicc -cc=icx

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 -mprefer-vector-width=512 -march=x86-64-v4 -ansi-alias

C++ benchmarks:
-Ofast -mprefer-vector-width=512 -march=x86-64-v4 -ansi-alias

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Base Optimization Flags (Continued)

Fortran benchmarks:

```
-Ofast -mprefer-vector-width=512 -march=x86-64-v4  
-nostandard-realloc-lhs -align array64byte
```

Peak Optimization Flags

C benchmarks:

```
505.lbm_t: basepeak = yes  
513.soma_t: basepeak = yes  
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.2024-12-31.html

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

http://www.spec.org/hpc2021/flags/Intel_compiler_flags.2024-12-31.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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