SPEChpc™ 2021 Tiny Result

Copyright 2021-2023 Standard Performance Evaluation Corporation

Supermicro

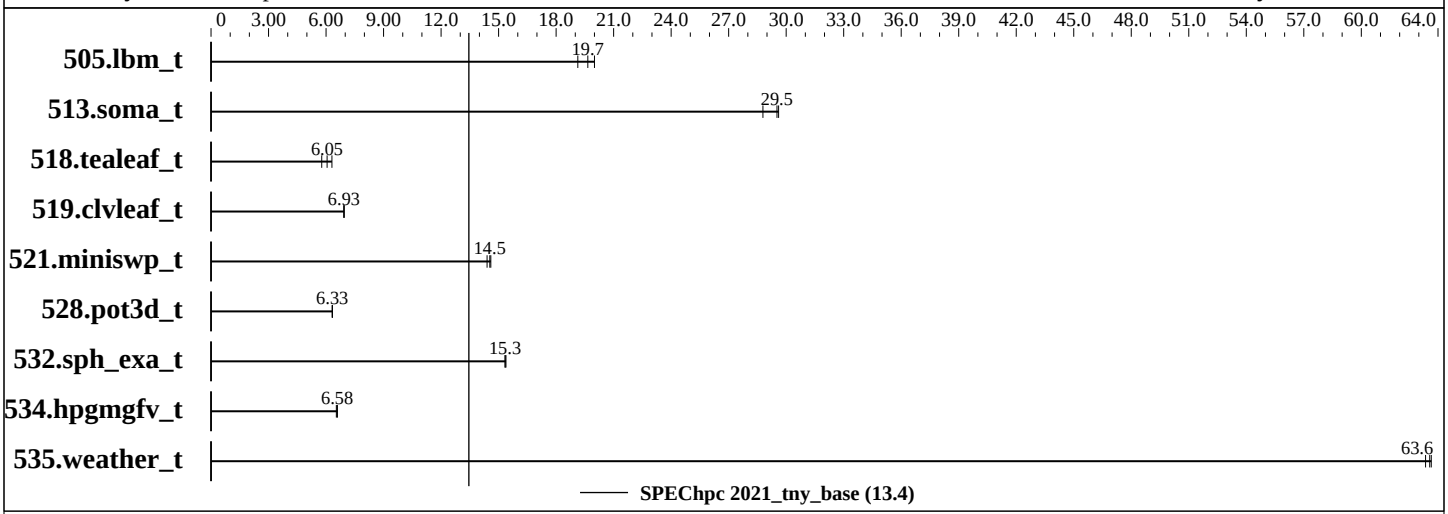
A+ Server 2025HS-TNR (AMD EPYC 9754)

SPEChpc 2021_tny_base = 13.4

SPEChpc 2021_tny_peak = Not Run

hpc2021 License: 6569
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: May-2023
Hardware Availability: Jun-2023
Software Availability: Feb-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	OMP	32	16	**114**	**19.7**	118	19.1	112	20.0									
513.soma_t	OMP	32	16	129	28.8	125	29.6	**125**	**29.5**									
518.tealeaf_t	OMP	32	16	286	5.77	**273**	**6.05**	262	6.31									
519.clvleaf_t	OMP	32	16	238	6.94	238	6.93	**238**	**6.93**									
521.miniswp_t	OMP	32	16	111	14.4	110	14.6	**110**	**14.5**									
528.pot3d_t	OMP	32	16	336	6.32	336	6.33	**336**	**6.33**									
532.sph_exa_t	OMP	32	16	127	15.4	127	15.3	**127**	**15.3**									
534.hpgmgfv_t	OMP	32	16	178	6.58	180	6.54	**178**	**6.58**									
535.weather_t	OMP	32	16	50.9	63.4	50.7	63.6	**50.7**	**63.6**									

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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:	A+ Server 2025HS-TNR
Compute Nodes Used:	1
Total Chips:	2
Total Cores:	256
Total Threads:	512
Total Memory:	1536 GB
Max. Peak Threads:	--

Software Summary

Compiler:	AMD Optimizing C/C++ and Fortran Compilers (AOCC) Version 4.0.0 Build 389 for Linux
MPI Library:	OpenMPI Version 4.1.4
Other MPI Info:	None
Other Software:	None
Base Parallel Model:	OMP
Base Ranks Run:	32
Base Threads Run:	16
Peak Parallel Models:	Not Run
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--
Max. Peak Threads:	--
Min. Peak Threads:	--

Node Description: A+ Server 2025HS-TNR

Hardware

Number of nodes:	1
Uses of the node:	compute
Vendor:	Supermicro
Model:	A+ Server 2025HS-TNR
CPU Name:	AMD EPYC 9754
CPU(s) orderable:	2 chips
Chips enabled:	2
Cores enabled:	256
Cores per chip:	128
Threads per core:	2
CPU Characteristics:	Max. Boost Clock upto 3.1GHz
CPU MHz:	2250
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	256 MB I+D on chip per chip 16 MB shared / 8 cores
Other Cache:	None
Memory:	1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)
Disk Subsystem:	1 x 800 GB Samsung U.2 NVMe 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
Ports Used:	0

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Software

Accelerator Driver:	--
Adapter:	None
Adapter Driver:	None
Adapter Firmware:	None
Operating System:	Ubuntu 22.04.2 LTS Kernel 5.15.0-71-generic
Local File System:	ext4
Shared File System:	None
System State:	Multi-user, run level 5
Other Software:	None

Node Description: A+ Server 2025HS-TNR

Hardware (Continued)

Interconnect Type: None

Submit Notes

```
The config file option 'submit' was used.
mpirun --allow-run-as-root --bind-to core:overload-allowed --map-by ppr:1:numa:pe=8 --mca topo basic -np $ranks $command
```

General Notes

```
MPI startup command:
  mpirun command was used to start MPI jobs.
```

Compiler Version Notes

```
==============================================================================
 CC  505.lbm_t(base) 513.soma_t(base) 518.tealeaf_t(base) 521.miniswp_t(base)
     534.hpgmgfv_t(base)
------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on
  LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-4.0.0/bin
------------------------------------------------------------------------------

==============================================================================
 CXXC 532.sph_exa_t(base)
------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on
  LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-4.0.0/bin
------------------------------------------------------------------------------

==============================================================================
 FC  519.clvleaf_t(base) 528.pot3d_t(base) 535.weather_t(base)
------------------------------------------------------------------------------
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on
  LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-4.0.0/bin
```

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Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`mpicc`

C++ benchmarks:
`mpicxx`

Fortran benchmarks:
`mpif90`

Base Portability Flags

519.clvleaf_t: `-DSPEC_USE_MPIFH`
528.pot3d_t: `-DSPEC_USE_MPIFH`
535.weather_t: `-DSPEC_USE_MPIFH`

Base Optimization Flags

C benchmarks:
`-O3 -ffast-math -flto -march=znver4 -fopenmp`

C++ benchmarks:
`-O3 -ffast-math -flto -march=znver4 -fopenmp`

Fortran benchmarks:
`-O3 -ffast-math -flto -march=znver4 -fopenmp`

Base Other Flags

C benchmarks (except as noted below):
`-Ispecmpitime -I/include`

521.miniswp_t: `-Ispecmpitime/ -I/include`

534.hpgmgfv_t: `-Ispecmpitime  -I/include`

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Base Other Flags (Continued)

C++ benchmarks:
`-Ispecmpitime  -I/include`

Fortran benchmarks (except as noted below):
`-I/include -I/include/`

519.clvleaf_t: `-Ispecmpitime -I/include -I/include/`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/hpc2021/flags/amd2021_flags.2022-11-10.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/hpc2021/flags/amd2021_flags.2022-11-10.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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