



# SPEChpc™ 2021 Small Result

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## Supermicro

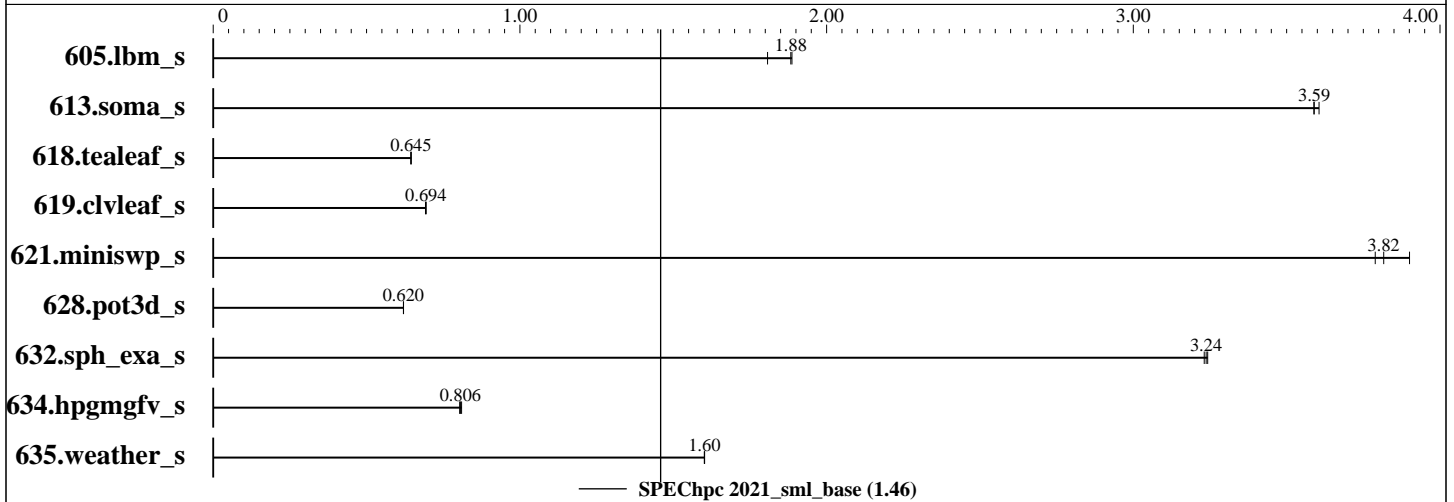
SPEChpc 2021\_sml\_base = 1.46

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

SPEChpc 2021\_sml\_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
605.lbm_s	OMP	32	16	821	1.89	858	1.81	<b>823</b>	<b>1.88</b>									
613.soma_s	OMP	32	16	446	3.59	444	3.61	<b>446</b>	<b>3.59</b>									
618.tealeaf_s	OMP	32	16	<b>3178</b>	<b>0.645</b>	3176	0.646	3181	0.644									
619.clvleaf_s	OMP	32	16	2384	0.692	2378	0.694	<b>2379</b>	<b>0.694</b>									
621.miniswp_s	OMP	32	16	290	3.79	<b>288</b>	<b>3.82</b>	282	3.90									
628.pot3d_s	OMP	32	16	2699	0.621	2700	0.620	<b>2700</b>	<b>0.620</b>									
632.sph_exa_s	OMP	32	16	709	3.24	712	3.23	<b>710</b>	<b>3.24</b>									
634.hpgmgfv_s	OMP	32	16	<b>1210</b>	<b>0.806</b>	1213	0.804	1204	0.810									
635.weather_s	OMP	32	16	1624	1.60	1623	1.60	<b>1623</b>	<b>1.60</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  
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

### 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

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### 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 605.lbm_s(base) 613.soma_s(base) 618.tealeaf_s(base) 621.miniswp_s(base)  
634.hpgmgfv_s(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 632.sph_exa_s(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 619.clvleaf_s(base) 628.pot3d_s(base) 635.weather_s(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  
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InstalledDir: /opt/AMD/aocc-compiler-4.0.0/bin  
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## Compiler Version Notes (Continued)

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## Base Compiler Invocation

C benchmarks:  
mpicc

C++ benchmarks:  
mpicxx

Fortran benchmarks:  
mpif90

## Base Portability Flags

619.cvleaf\_s: -DSPEC\_USE\_MPIFH  
628.pot3d\_s: -DSPEC\_USE\_MPIFH  
635.weather\_s: -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:  
-Ispecmpitime -I/include

C++ benchmarks:  
-Ispecmpitime -I/include

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## Base Other Flags (Continued)

Fortran benchmarks (except as noted below):

-I/include -I/include/

619.clvleaf\_s: -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](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](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](mailto:info@spec.org).

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