



# SPEChpc™ 2021 Tiny Result

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## Supermicro

SPEChpc 2021\_tny\_base = 5.74

A+ Server 2115GT-HNTF (AMD EPYC 9654)

SPEChpc 2021\_tny\_peak = Not Run

hpc2021 License: 6569

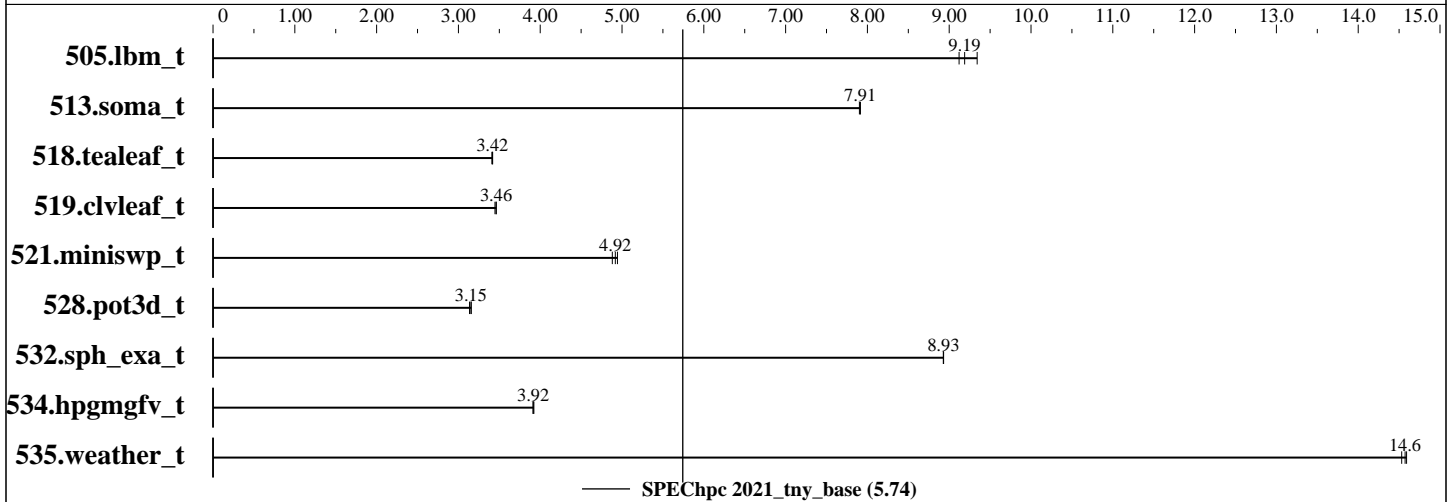
Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Jan-2023

Hardware Availability: Nov-2022

Software Availability: Nov-2022



## 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	241	9.34	247	9.12	<b>245</b>	<b>9.19</b>									
513.soma_t	MPI	192	1	468	7.90	468	7.91	<b>468</b>	<b>7.91</b>									
518.tealeaf_t	MPI	192	1	483	3.42	<b>483</b>	<b>3.42</b>	484	3.41									
519.clvleaf_t	MPI	192	1	<b>477</b>	<b>3.46</b>	477	3.46	479	3.45									
521.miniswp_t	MPI	192	1	<b>325</b>	<b>4.92</b>	324	4.94	328	4.88									
528.pot3d_t	MPI	192	1	673	3.16	678	3.14	<b>674</b>	<b>3.15</b>									
532.sph_exa_t	MPI	192	1	218	8.93	<b>218</b>	<b>8.93</b>	218	8.93									
534.hpgmgfv_t	MPI	192	1	300	3.91	300	3.92	<b>300</b>	<b>3.92</b>									
535.weather_t	MPI	192	1	221	14.6	<b>221</b>	<b>14.6</b>	222	14.5									

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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 2115GT-HNTF  
Compute Nodes Used: 1  
Total Chips: 1  
Total Cores: 96  
Total Threads: 192  
Total Memory: 1152 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 4.1.1  
Other MPI Info: None  
Other Software: None  
Base Parallel Model: MPI  
Base Ranks Run: 192  
Base Threads Run: 1  
Peak Parallel Models: Not Run  
Minimum Peak Ranks: --  
Maximum Peak Ranks: --  
Max. Peak Threads: --  
Min. Peak Threads: --

## Node Description: A+ Server 2115GT-HNTF

### Hardware

Number of nodes: 1  
Uses of the node: compute  
Vendor: Supermicro  
Model: A+ Server 2115GT-HNTF  
CPU Name: AMD EPYC 9654  
CPU(s) orderable: 1 chip  
Chips enabled: 1  
Cores enabled: 96  
Cores per chip: 96  
Threads per core: 2  
CPU Characteristics: Max. Boost Clock upto 3.7GHz  
CPU MHz: 2400  
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: 1152 GB (12 x 96 GB 2Rx4 PC5-4800B-R)  
Disk Subsystem: 1 x 960 GB SATA SSD  
Other Hardware: None  
Accel Count: --  
Accel Model: --  
Accel Vendor: --  
Accel Type: --  
Accel Connection: --  
Accel ECC enabled: --  
Accel Description: --  
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 22.04.1 LTS  
Kernel 5.15.0-56-generic  
Local File System: ext4  
Shared File System: None  
System State: Multi-user, run level 3  
Other Software: None

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### Node Description: A+ Server 2115GT-HNTF

#### Hardware (Continued)

Interconnect Type: None

### Submit Notes

The config file option 'submit' was used.

### 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  
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## 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

C++ benchmarks:

-O3 -ffast-math -flto -march=znver4

Fortran benchmarks:

-O3 -ffast-math -flto -march=znver4

## Base Other Flags

C benchmarks (except as noted below):

-Ispecmpitime -I/include

521.miniswp\_t: -Ispecmpitime/ -I/include

534.hpgmgfv\_t: -Ispecmpitime -I/include

C++ benchmarks:

-Ispecmpitime -I/include

Fortran benchmarks (except as noted below):

-I/include -I/include/

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## Base Other Flags (Continued)

```
519.cvlleaf_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](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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