



# SPEChpc™ 2021 Small Result

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## Supermicro

SPEChpc 2021\_sml\_base = 0.3274

### A+ Server 2115GT-HNTF (AMD EPYC 9174F)

SPEChpc 2021\_sml\_peak = Not Run

hpc2021 License: 6569

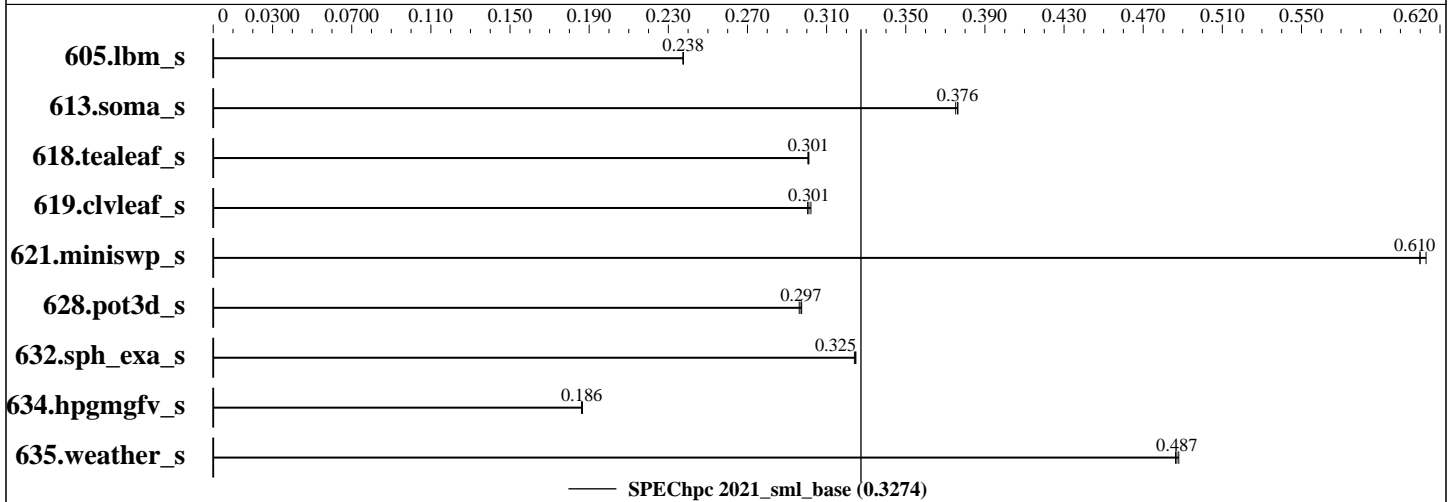
Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Feb-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	
605.lbm_s	OMP	8	4	6528	0.237	6523	0.238	<b>6525</b>	<b>0.238</b>										
613.soma_s	OMP	8	4	<b>4253</b>	<b>0.376</b>	4251	0.376	4264	0.375										
618.tealeaf_s	OMP	8	4	6820	0.301	6810	0.301	<b>6815</b>	<b>0.301</b>										
619.clvleaf_s	OMP	8	4	<b>5481</b>	<b>0.301</b>	5493	0.300	5462	0.302										
621.miniswp_s	OMP	8	4	1795	0.613	<b>1804</b>	<b>0.610</b>	1804	0.610										
628.pot3d_s	OMP	8	4	5632	0.297	5655	0.296	<b>5639</b>	<b>0.297</b>										
632.sph_exa_s	OMP	8	4	<b>7086</b>	<b>0.325</b>	7081	0.325	7098	0.324										
634.hpgmgfv_s	OMP	8	4	5236	0.186	5225	0.187	<b>5234</b>	<b>0.186</b>										
635.weather_s	OMP	8	4	5346	0.486	<b>5338</b>	<b>0.487</b>	5328	0.488										

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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: 16  
Total Threads: 32  
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: OMP  
Base Ranks Run: 8  
Base Threads Run: 4  
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 9174F  
CPU(s) orderable: 1 chip  
Chips enabled: 1  
Cores enabled: 16  
Cores per chip: 16  
Threads per core: 2  
CPU Characteristics: Max. Boost Clock upto 4.4GHz  
CPU MHz: 4100  
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  
32 MB shared / 2 cores  
Other Cache: None  
Memory: 1152 GB (12 x 96 GB 2Rx8 PC5-4800B-R)  
Disk Subsystem: 1 x 1.92 TB Samsung SATA III 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 5.15.0-58-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 2115GT-HNTF

#### Hardware (Continued)

Interconnect Type: --

### 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 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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## Base Compiler Invocation

C benchmarks:

mpicc

C++ benchmarks:

mpicxx

Fortran benchmarks:

mpif90

## Base Portability Flags

619.clvleaf\_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

Fortran benchmarks (except as noted below):

-I/include -I/include/

619.clvleaf\_s: -Ispecmpitime -I/include -I/include/



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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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