**Supermicro**

A+ Server 1025CS-TNR (AMD EPYC 9754)  

**SPECmpimM_peak2007 = 36.4**  
**SPECmpimM_base2007 = 36.4**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Ranks</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tr>
<td>104.milc</td>
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<td>54.9</td>
<td>28.5</td>
<td>55.2</td>
<td>28.4</td>
<td>55.3</td>
<td>28.3</td>
<td>128</td>
<td>54.9</td>
<td>28.5</td>
<td>55.3</td>
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<tr>
<td>113.GemsFDTD</td>
<td>128</td>
<td>173</td>
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<td>36.8</td>
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<td>121.pop2</td>
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<td>119</td>
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<td>121</td>
<td>34.0</td>
<td>121</td>
<td>34.2</td>
<td>128</td>
<td>119</td>
<td>34.5</td>
<td>121</td>
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<td>122.tachyon</td>
<td>128</td>
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<td>75.9</td>
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<td>88.5</td>
<td>31.6</td>
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<td>72.9</td>
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<td>126.lammps</td>
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<td>30.7</td>
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<td>136</td>
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<td>136</td>
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<td>57.4</td>
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<td>129.tera tf</td>
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<td>96.6</td>
<td>28.7</td>
<td>96.4</td>
<td>28.7</td>
<td>128</td>
<td>97.2</td>
<td>28.5</td>
<td>96.6</td>
</tr>
</tbody>
</table>

Results Table

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
**SPEC MPI2007 Result**

Supermicro

A+ Server 1025CS-TNR (AMD EPYC 9754)

**SPECmpiiM_peak2007 = 36.4**

**SPECmpiiM_base2007 = 36.4**

MP2007 license: 6569
Test sponsor: Supermicro
Tested by: Supermicro

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### Hardware Summary

<table>
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<tr>
<th>Benchmark</th>
<th>Ranks</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>130.socorro</td>
<td>128</td>
<td>60.4</td>
<td>63.2</td>
<td>60.9</td>
<td>62.6</td>
<td>60.6</td>
<td>63.0</td>
</tr>
<tr>
<td>132.zeusmp2</td>
<td>128</td>
<td>85.1</td>
<td>36.5</td>
<td>85.1</td>
<td>36.4</td>
<td>85.1</td>
<td>36.4</td>
</tr>
<tr>
<td>137.lu</td>
<td>128</td>
<td>71.3</td>
<td>51.6</td>
<td>73.6</td>
<td>49.9</td>
<td>72.0</td>
<td>51.1</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

### Node Description: A+ Server 1025CS-TNR

**Hardware**

- Number of nodes: 1
- Uses of the node: compute
- Vendor: Supermicro
- Model: A+ Server 1025CS-TNR
- CPU Name: AMD EPYC 9754
- CPU(s) orderable: 1 chip
- Chips enabled: 1
- Cores enabled: 128
- 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 core
- Other Cache: None
- Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
- Disk Subsystem: 1 x 480 GB NVMe PCIe Gen4.0
- Other Hardware: None
- Adapter: None
- Number of Adapters: 0
- Slot Type: None
- Data Rate: None

**Software**

- Adapter: None
- Adapter Driver: None
- Adapter Firmware: None
- Operating System: Ubuntu 22.04.2 LTS
- Local File System: ext4
- Shared File System: None
- System State: Multi-user, run level 3
- Other Software: None

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Continued on next page
Supermicro
A+ Server 1025CS-TNR (AMD EPYC 9754)

SPECmpiM_peak2007 = 36.4
SPECmpiM_base2007 = 36.4

MPI2007 license: 6569
Test sponsor: Supermicro
Tested by: Supermicro

Node Description: A+ Server 1025CS-TNR

Ports Used: 0
Interconnect Type: None

Submit Notes

The config file option 'submit' was used.
mpirun --allow-run-as-root -np $ranks $command

General Notes

Environment variables set by runspec before the start of the run:
GOMP_CPU_AFFINITY = "0-128"
KMP_BLOCKTIME = "200"
KMP_LIBRARY = "turnaround"
OMP_DYNAMIC = "false"
OMP_NESTED = "FALSE"
OMP_PLACES = "threads"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "128"

MPI startup command:
mpirun command was used to start MPI jobs.
RAM configuration:
Compute nodes have 1 x 64 GB RDIMM on each memory channel.
BIOS settings:
NUMA nodes per socket = NPS4
L3 Cache as NUMA Domain = Enabled
Determinism Control = Manual
Determinism Slider = Power
TDP Control = Manual
TDP = 400
PPT Control = Manual
PPT = 400

Yes: The test sponsor attests, as of date of publication,
that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication,
that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication,
that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Submitted_by: Henry Lai <henryl@supermicro.com.tw>
Submitted: Tue May 16 23:42:20 EDT 2023
Submission: mpi2007-20230516-00691.sub
Supermicro
A+ Server 1025CS-TNR (AMD EPYC 9754)

SPECmpiM\_peak2007 = 36.4
SPECmpiM\_base2007 = 36.4

Base Compiler Invocation

C benchmarks:
mpicc

C++ benchmarks:

126.lammps: mpic++

Fortran benchmarks:
mpif90

Benchmarks using both Fortran and C:
mpicc mpif90

Base Portability Flags

104.milc: -DSPEC\_MPI\_LP64
115.fds4: -DSPEC\_MPI\_LP64
121.pop2: -DSPEC\_MPI\_CASE\_FLAG -DSPEC\_MPI\_LP64
122.tachyon: -DSPEC\_MPI\_LP64
126.lammps: -DMPICH\_IGNORE\_CXX\_SEEK
127.wrf2: -DSPEC\_MPI\_CASE\_FLAG -DSPEC\_MPI\_LINUX -DSPEC\_MPI\_LP64
128.GAPgeofem: -DSPEC\_MPI\_LP64
130.socorro: -DSPEC\_MPI\_LP64
132.zeusmp2: -DSPEC\_MPI\_LP64

Base Optimization Flags

C benchmarks:
-Ofast -flto -ffast-math -march=znver4 -lamdlibm -ljemalloc -lflang

C++ benchmarks:

126.lammps: -Ofast -flto -ffast-math -march=znver4 -lamdlibm -ljemalloc -lflang

Fortran benchmarks:
-Ofast -flto -ffast-math -march=znver4 -funroll-loops -lamdlibm -ljemalloc -lflang

Benchmarks using both Fortran and C:
-Ofast -flto -ffast-math -march=znver4 -funroll-loops -lamdlibm -ljemalloc -lflang
Supermicro
A+ Server 1025CS-TNR (AMD EPYC 9754)

SPECmpimM_peak2007 = 36.4
SPECmpimM_base2007 = 36.4

Base Other Flags

Benchmarks using both Fortran and C:
127.wrf2: -Wno-return-type

Peak Optimization Flags

C benchmarks:
104.milc: basepeak = yes
122.tachyon: basepeak = yes

C++ benchmarks:
126.lammps: basepeak = yes

Fortran benchmarks:
107.leslie3d: basepeak = yes
113.GemsFDTD: basepeak = yes
129.tera_tf: basepeak = yes
137.lu: basepeak = yes

Benchmarks using both Fortran and C:
115.fds4: basepeak = yes
121.pop2: basepeak = yes
127.wrf2: basepeak = yes
128.GAPgeofem: basepeak = yes
130.socorro: basepeak = yes
132.zeusmp2: basepeak = yes

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:
## SPEC MPI2007 Result

### Supermicro

A+ Server 1025CS-TNR (AMD EPYC 9754)

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**MPI2007 license:** 6569  
**Test date:** May-2023  
**Test sponsor:** Supermicro  
**Hardware Availability:** Jun-2023  
**Tested by:** Supermicro  
**Software Availability:** Nov-2022

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For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

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