## Lenovo Global Technology

ThinkSystem SR655  
(AMD EPYC 7H12 CPU, 2.6 GHz)

### SPECmpiM Result

**SPECmpiM_peak2007** = Not Run  
**SPECmpiM_base2007** = 17.7

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Ranks</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Peak Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>104.milc</td>
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<td>143</td>
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<td>113.GemsFDTD</td>
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<tr>
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<tr>
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<td>126.lammps</td>
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<td>113</td>
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<td>113</td>
<td>24.6</td>
</tr>
</tbody>
</table>

**Table continues on next page.**  
Results appear in the order in which they were run.  
Bold underlined text indicates a median measurement.
**Lenovo Global Technology**

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(AMD EPYC 7H12 CPU, 2.6 GHz)

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**SPECmpiM_base2007 = 17.7**

**Test date:** Jan-2020

**Hardware Availability:** Jun-2020

**Software Availability:** Dec-2018

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### Results Table (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Ranks</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
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<tbody>
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<td>156</td>
<td>23.6</td>
<td>156</td>
<td>23.6</td>
</tr>
</tbody>
</table>

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:** Homogeneous
- **Compute Node:** ThinkSystem SR655
- **Total Compute Nodes:** 1
- **Total Chips:** 1
- **Total Cores:** 64
- **Total Threads:** 64
- **Total Memory:** 256 GB
- **Base Ranks Run:** 64
- **Minimum Peak Ranks:** --
- **Maximum Peak Ranks:** --

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**Software Summary**

- **C Compiler:** Intel C++ Compiler 17.0 Update 7 for Linux Version 17.0.7 Build 20180403
- **C++ Compiler:** Intel C++ Compiler 17.0 Update 7 for Linux Version 17.0.7 Build 20180403
- **Fortran Compiler:** Intel Fortran Compiler 17.0 Update 7 for Linux Version 17.0.7 Build 20180403
- **Base Pointers:** 64-bit
- **Peak Pointers:** Not Applicable
- **MPI Library:** Intel MPI Library for Linux* OS Version 2018 Update 3 Build 20180411
- **Other MPI Info:** None
- **Pre-processors:** No
- **Other Software:** None

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**Node Description: ThinkSystem SR655**

**Hardware**

- **Number of nodes:** 1
- **Uses of the node:** compute
- **Vendor:** Lenovo Global Technology
- **Model:** SR655
- **CPU Name:** AMD EPYC 7H12 CPU
- **CPU(s) orderable:** 1 chips
- **Chips enabled:** 1
- **Cores enabled:** 64
- **Cores per chip:** 64
- **Threads per core:** 1
- **CPU Characteristics:** None
- **CPU MHz:** 2600
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 512 KB I+D on chip per core
- **L3 Cache:** 256 MB I+D on chip per core
- **Other Cache:** None
- **Memory:** 256 GB (8 x 32 GB 2Rx8 PC4-3200AA-R)
- **Disk Subsystem:** 1 x 480 GB SATA 2.5" SSD
- **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:** SUSE Linux Enterprise Linux Server 12 SP 4 4.12.14-94.41-default
- **Local File System:** xfs
- **Shared File System:** None
- **System State:** Multi-user, run level 3
- **Other Software:** None
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SPECmpiM_peak2007 = Not Run
SPECmpiM_base2007 = 17.7

MPI2007 license: 28
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Node Description: ThinkSystem SR655
Ports Used: 0
Interconnect Type: None

Submit Notes
The config file option 'submit' was used.

General Notes
MPI startup command:
  mpiexec command was used to start MPI jobs.

RAM configuration:
  Compute nodes have 1 x 32 GB RDIMM on each memory channel.

Add "idle=poll" into grub

BIOS settings:
  Operating Mode : Maximum Performance Mode
  Hyper-Threading Technology (SMT): Disabled
  NPS4

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.

Base Compiler Invocation

C benchmarks:
  mpiicc

C++ benchmarks:
  126.lammps: mpiicpc

Fortran benchmarks:
  mpiifort

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**Base Compiler Invocation (Continued)**

Benchmarks using both Fortran and C:
mpiicc mpiifort

**Base Portability Flags**

- 121.pop2: -DSPEC_MPI_CASE_FLAG
- 126.lammps: -DMPICH_IGNORE_CXXSEEK
- 127.wrf2: -DSPEC_MPI_CASE_FLAG -DSPEC_MPI_LINUX
- 130.socorro: -assume nostd_intent_in

**Base Optimization Flags**

C benchmarks:
- -O3 -march=core-avx2 -no-prec-div -ipo

C++ benchmarks:
- 126.lammps: -O3 -march=core-avx2 -no-prec-div -ipo

Fortran benchmarks:
- -O3 -march=core-avx2 -no-prec-div -ipo

Benchmarks using both Fortran and C:
- -O3 -march=core-avx2 -no-prec-div -ipo

The flags files that were used to format this result can be browsed at:
http://www.spec.org/mpi2007/flags/EM64T_Intel121_flags.20190807.html
http://www.spec.org/mpi2007/flags/Lenovo-SPECmpiM_Platform_Flags.20190807.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/mpi2007/flags/EM64T_Intel121_flags.20190807.xml
http://www.spec.org/mpi2007/flags/Lenovo-SPECmpiM_Platform_Flags.20190807.xml

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

Tested with SPEC MPI2007 v2.0.1.