Lenovo Global Technology
ThinkSystem SR950
(Intel Xeon Platinum 8280L CPU, 2.70 GHz)

SPECmpiM_peak2007 = Not Run
SPECmpiM_base2007 = 61.9

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Ranks</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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<tr>
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<td>54.7</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.
SPEC MPIM2007 Result

Lenovo Global Technology
ThinkSystem SR950
(Intel Xeon Platinum 8280L CPU, 2.70 GHz)

SPECmpiM_peak2007 = Not Run
SPECmpiM_base2007 = 61.9

Test date: Mar-2019
Hardware Availability: Apr-2019
Software Availability: Apr-2019

Results Table (Continued)

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<th>Benchmark</th>
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<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
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</thead>
<tbody>
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<td>70.6</td>
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<td>101</td>
<td>36.5</td>
<td>101</td>
<td>36.4</td>
<td>101</td>
</tr>
</tbody>
</table>

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

**Hardware Summary**

Type of System: Homogeneous
Compute Node: ThinkSystem SR950
Interconnect: N/A
Total Compute Nodes: 1
Total Chips: 8
Total Cores: 224
Total Memory: 1536 GB
Base Ranks Run: 224
Minimum Peak Ranks: --
Maximum Peak Ranks: --

**Software Summary**

C Compiler: Intel C++ Compiler 18.0 Update 3 for Linux Version 18.0.3 Build 20180410
C++ Compiler: Intel C++ Compiler 18.0 Update 3 for Linux Version 18.0.3 Build 20180410
Fortran Compiler: Intel Fortran Compiler 18.0 Update 3 for Linux Version 18.0.3 Build 20180410
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

**Node Description: ThinkSystem SR950**

**Hardware**

Number of nodes: 1
Uses of the node: compute
Vendor: Lenovo Global Technology
Model: SR950
CPU Name: Intel Xeon Platinum 8280L
CPU(s) orderable: 2,3,4,6,8 chips
Chips enabled: 8
Cores enabled: 224
Cores per chip: 28
Threads per core: 1
CPU Characteristics: None
CPU MHz: 2700
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 38.5 MB I+D on chip per chip
Other Cache: None
Memory: 1536 GB (96 x 16 GB 2Rx8 PC4-2933Y-R)
Disk Subsystem: 1 x 1 TB NVMe 2.5" SSD
Other Hardware: N/A
Adapter: N/A
Number of Adapters: 0
Slot Type: N/A
Data Rate: N/A
Ports Used: 0

**Software**

Adapter: N/A
Adapter Driver: N/A
Adapter Firmware: N/A
Operating System: Red Hat Enterprise Linux Server release 7.6, Kernel 3.10.0-957.el7.x86_64
Local File System: xfs
Shared File System: None
System State: Multi-user, run level 3
Other Software: None

Continued on next page
Lenovo Global Technology

ThinkSystem SR950
(Intel Xeon Platinum 8280L CPU, 2.70 GHz)

SPECmpiM_peak2007 = Not Run
SPECmpiM_base2007 = 61.9

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

Test date: Mar-2019
Hardware Availability: Apr-2019
Software Availability: Apr-2019

Node Description: ThinkSystem SR950

Interconnect Type: None

Interconnect Description: N/A

Hardware

Software

Vendor: N/A
Model: N/A
Switch Model: N/A
Number of Switches: 0
Number of Ports: 0
Data Rate: N/A
Firmware: N/A
Topology: N/A
Primary Use: N/A

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 2 x 16 GB RDIMM on each memory channel.

BIOS settings:

Operating Mode : Maximum Performance Mode
Intel Hyper-Threading Technology (SMT): Disabled
SNC (Sub-NUMA Cluster): Enable

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.
Lenovo Global Technology
ThinkSystem SR950
(Intel Xeon Platinum 8280L CPU, 2.70 GHz)

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## Base Compiler Invocation

C benchmarks:
- mpiicc

C++ benchmarks:
- 126.lammps: mpiicpc

Fortran benchmarks:
- mpiifort

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 -ipo -xCORE-AVX512 -no-prec-div

C++ benchmarks:
- 126.lammps: -O3 -ipo -xCORE-AVX512 -no-prec-div

Fortran benchmarks:
- -O3 -ipo -xCORE-AVX512 -no-prec-div

Benchmarks using both Fortran and C:
- -O3 -ipo -xCORE-AVX512 -no-prec-div

---

The flags files that were used to format this result can be browsed at:

- http://www.spec.org/mpi2007/flags/EM64T_Intel121_flags.20170711.html

You can also download the XML flags sources by saving the following links:

- http://www.spec.org/mpi2007/flags/EM64T_Intel121_flags.20170711.xml
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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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