**SPEC® MPI2007 Result**

**Lenovo Global Technology**

ThinkSystem SR950  
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

**SPECmpiM_peak2007 = Not Run**

**SPECmpiM_base2007 = 35.1**

<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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</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
ThinkSystem SR950
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

SPECmpiM_peak2007 = Not Run
SPECmpiM_base2007 = 35.1

Hardware Summary
Type of System: Homogeneous
Compute Node: ThinkSystem SR950
Interconnect: N/A
Total Compute Nodes: 1
Total Chips: 4
Total Cores: 112
Total Threads: 112
Total Memory: 768 GB
Base Ranks Run: 112
Minimum Peak Ranks: --
Maximum Peak Ranks: --

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

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 8180
CPU(s) orderable: 2,3,4,6,8 chips
Chips enabled: 4
Cores enabled: 112
Cores per chip: 28
Threads per core: 1
CPU Characteristics: None
CPU MHZ: 2500
Primary Cache: 32 KB L1 + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 39424 KB I+D on chip per core
shared / 28 cores
Other Cache: None
Memory: 768 GB (48 x 16GB 2Rx8 PC4-2666V)
Disk Subsystem: 960GB NVME SSD
Other Hardware: ThinkSystem RAID 930-8i 2GB Flash
Adapter: N/A
Number of Adapters: 0
Slot Type: N/A
Data Rate: N/A

Software
Adapter: N/A
Adapter Driver: N/A
Adapter Firmware: N/A
Operating System: Red Hat Enterprise Linux Server release 7.3,
Kernel 3.10.0-514.48.5.el7.x86_64
Local File System: xfs
Shared File System: None
System State: None
Other Software: None

Results Table (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Ranks</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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Lenovo Global Technology
ThinkSystem SR950
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

SPECmpiM_peak2007 = Not Run
SPECmpiM_base2007 = 35.1

MPI2007 license: 28
Test sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology
Test date: Jul-2018
Hardware Availability: Aug-2017
Software Availability: Jul-2018

Node Description: ThinkSystem SR950

Ports Used: 0
Interconnect Type: None

Interconnect Description: N/A

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<th>Software</th>
</tr>
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<tbody>
<tr>
<td>Vendor:  N/A</td>
<td>Vendor:  N/A</td>
</tr>
<tr>
<td>Model:   N/A</td>
<td>Model:   N/A</td>
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<tr>
<td>Switch Model: N/A</td>
<td>Switch Model: N/A</td>
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<td>Number of Switches: 0</td>
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<tr>
<td>Topology: N/A</td>
<td>Topology: N/A</td>
</tr>
<tr>
<td>Primary Use: N/A</td>
<td>Primary Use: N/A</td>
</tr>
</tbody>
</table>

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.

Add "intel_idle.max_cstate=0 intel_pstate=disable" into grub

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 8180 CPU, 2.50 GHz)

SPECmpim_peak2007 = Not Run
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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: -DMPI_ignore_CXX_SEEK
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/Lenovo-SPECmpim_Platform_Flags.20180912.xml
http://www.spec.org/mpi2007/flags/EM64T_Intel121_flags.20170711.xml
# SPEC MPI2007 Result

**Lenovo Global Technology**

**ThinkSystem SR950**  
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

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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.
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