



# SPEC® MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## Lenovo Global Technology

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

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 36.8

MPI2007 license: 28

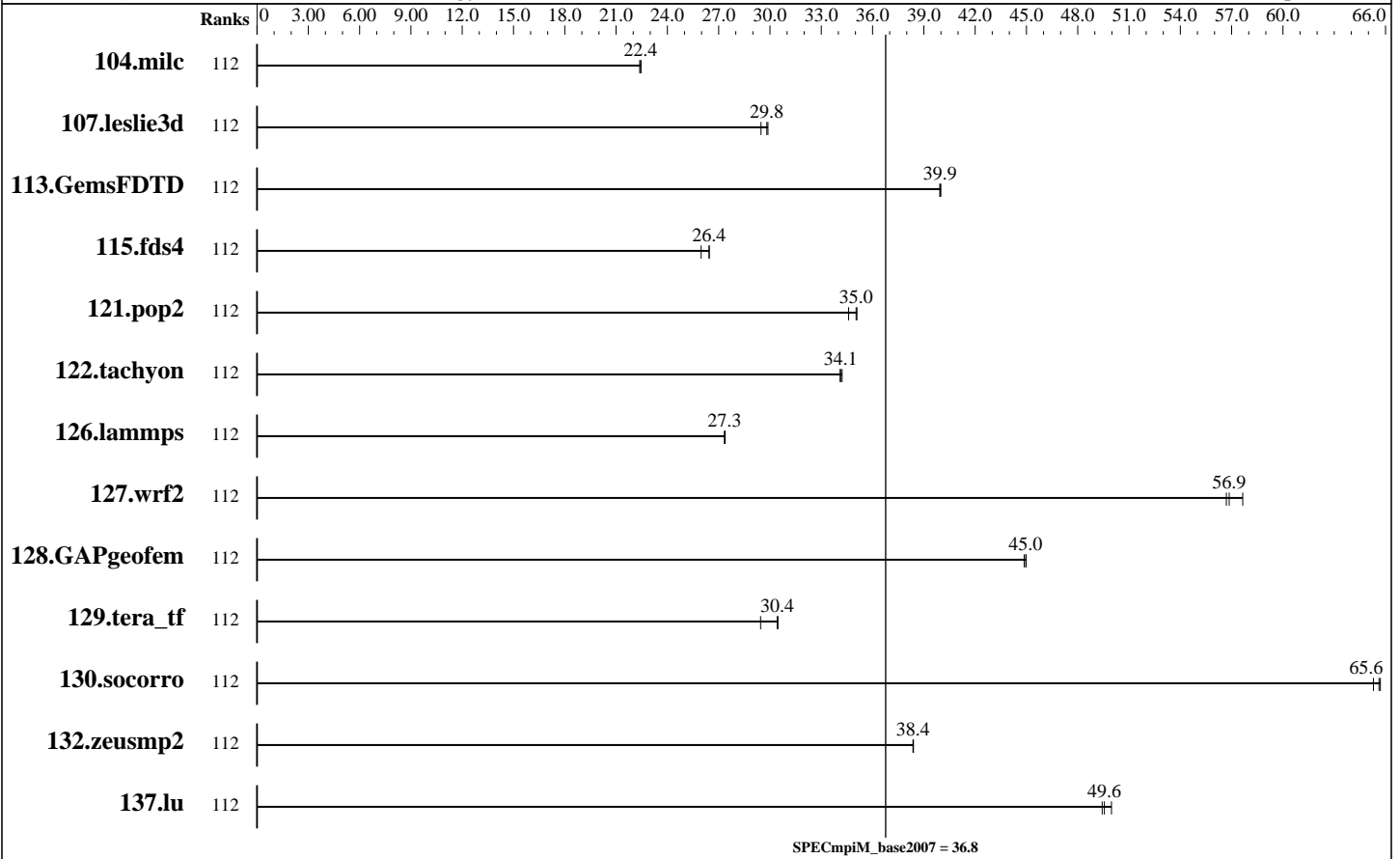
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Mar-2019

Hardware Availability: Apr-2019

Software Availability: Apr-2019



## Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	112	69.7	22.5	<b><u>69.7</u></b>	<b><u>22.4</u></b>	69.9	22.4									
107.leslie3d	112	175	29.9	<b><u>175</u></b>	<b><u>29.8</u></b>	177	29.5									
113.GemsFDTD	112	158	39.9	<b><u>158</u></b>	<b><u>39.9</u></b>	158	40.0									
115.fds4	112	73.8	26.5	<b><u>73.8</u></b>	<b><u>26.4</u></b>	75.1	26.0									
121.pop2	112	118	35.1	119	34.6	<b><u>118</u></b>	<b><u>35.0</u></b>									
122.tachyon	112	<b><u>81.9</u></b>	<b><u>34.1</u></b>	82.0	34.1	81.7	34.2									
126.lammmps	112	106	27.4	<b><u>107</u></b>	<b><u>27.3</u></b>	107	27.3									
127.wrf2	112	135	57.6	<b><u>137</u></b>	<b><u>56.9</u></b>	138	56.7									
128.GAPgeofem	112	<b><u>45.9</u></b>	<b><u>45.0</u></b>	46.0	44.9	45.9	45.0									
129.tera_tf	112	90.9	30.5	94.0	29.5	<b><u>91.0</u></b>	<b><u>30.4</u></b>									

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

Copyright 2006-2010 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECmpiM\_peak2007 = Not Run

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

SPECmpiM\_base2007 = 36.8

MPI2007 license: 28

Test date: Mar-2019

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

Software Availability: Apr-2019

### Results Table (Continued)

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
130.socorro	112	58.1	65.7	<u>58.2</u>	<u>65.6</u>	58.5	65.3									
132.zeusmp2	112	80.9	38.4	<u>80.9</u>	<u>38.4</u>	80.8	38.4									
137.lu	112	73.6	50.0	<u>74.2</u>	<u>49.6</u>	74.4	49.4									

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: 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 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: 4  
 Cores enabled: 112  
 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: 768 GB (48 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



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECmpiM\_peak2007 = Not Run

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

SPECmpiM\_base2007 = 36.8

MPI2007 license: 28

Test date: Mar-2019

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

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.



# SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECmpiM\_peak2007 = Not Run

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

SPECmpiM\_base2007 = 36.8

MPI2007 license: 28

Test date: Mar-2019

Test sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

Software Availability: Apr-2019

## 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\_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](http://www.spec.org/mpi2007/flags/EM64T_Intel121_flags.20170711.html)  
[http://www.spec.org/mpi2007/flags/Lenovo-SPECmpiM\\_Platform\\_Flags.html](http://www.spec.org/mpi2007/flags/Lenovo-SPECmpiM_Platform_Flags.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](http://www.spec.org/mpi2007/flags/EM64T_Intel121_flags.20170711.xml)  
[http://www.spec.org/mpi2007/flags/Lenovo-SPECmpiM\\_Platform\\_Flags.xml](http://www.spec.org/mpi2007/flags/Lenovo-SPECmpiM_Platform_Flags.xml)



# SPEC MPI2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

## Lenovo Global Technology

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

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 36.8

**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

SPEC and SPEC MPI are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC MPI2007 v2.0.1.  
Report generated on Tue Apr 2 18:30:28 2019 by SPEC MPI2007 PS/PDF formatter v1463.  
Originally published on 2 April 2019.