



SPEC® MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR650
(Intel Xeon Platinum 8280 CPU, 2.70 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 10.0

MPI2007 license: 28

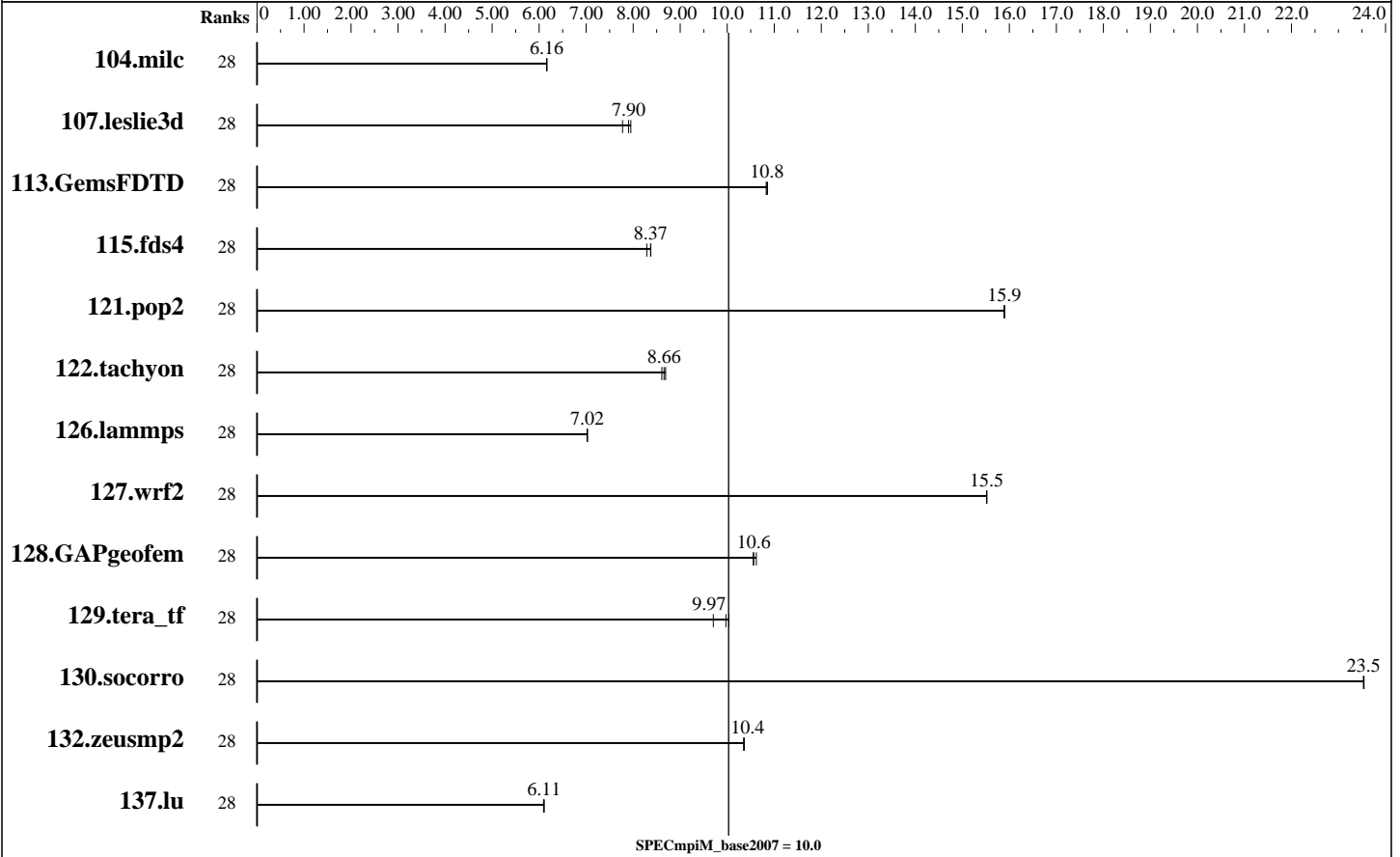
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Apr-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	28	254	6.16	254	6.17	<u>254</u>	<u>6.16</u>							
107.leslie3d	28	657	7.95	<u>661</u>	<u>7.90</u>	672	7.77							
113.GemsFDTD	28	<u>582</u>	<u>10.8</u>	581	10.9	583	10.8							
115.fds4	28	<u>233</u>	<u>8.37</u>	233	8.38	235	8.29							
121.pop2	28	<u>260</u>	<u>15.9</u>	260	15.9	260	15.9							
122.tachyon	28	325	8.61	<u>323</u>	<u>8.66</u>	322	8.69							
126.lammps	28	415	7.03	415	7.02	<u>415</u>	<u>7.02</u>							
127.wrf2	28	502	15.5	<u>502</u>	<u>15.5</u>	502	15.5							
128.GAPgeofem	28	196	10.6	194	10.6	<u>195</u>	<u>10.6</u>							
129.tera_tf	28	285	9.70	<u>278</u>	<u>9.97</u>	276	10.0							

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



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Results Table (Continued)

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
130.socorro	28	162	23.5	162	23.5	162	23.5									
132.zeusmp2	28	300	10.4	300	10.4	299	10.4									
137.lu	28	602	6.11	603	6.09	602	6.11									

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 SR650
 Interconnect: N/A
 Total Compute Nodes: 1
 Total Chips: 1
 Total Cores: 28
 Total Threads: 28
 Total Memory: 384 GB
 Base Ranks Run: 28
 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 SR650

Hardware

Number of nodes: 1
 Uses of the node: compute
 Vendor: Lenovo Global Technology
 Model: SR650
 CPU Name: Intel Xeon Platinum 8280
 CPU(s) orderable: 1-2 chips
 Chips enabled: 1
 Cores enabled: 28
 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
 shared / 28 cores
 Other Cache: None
 Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2933Y-R)
 Disk Subsystem: 1 x 1 TB 12 Gbps SAS 2.5" SSD (JBOD)
 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: SUSE Linux Enterprise Server 12 SP4
 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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Node Description: ThinkSystem SR650

Ports Used: 0
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 32 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.



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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_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 file that was 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 source by saving the following link:

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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