



SPEC® MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR650
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 34.0

MPI2007 license: 28

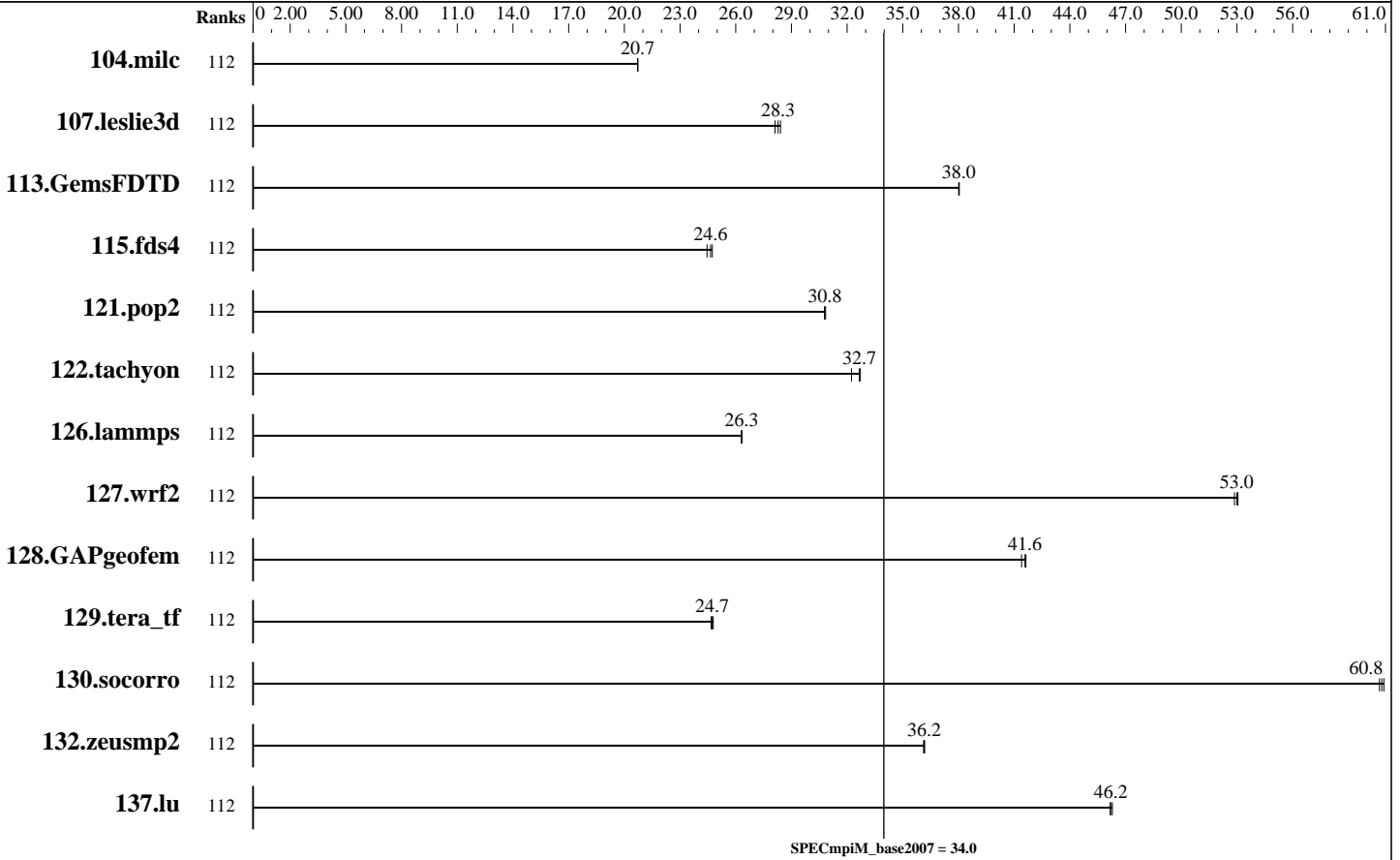
Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Sep-2017

Hardware Availability: Aug-2017

Software Availability: Aug-2017



Results Table

Benchmark	Base								Peak					
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	112	75.6	20.7	75.5	20.7	<u>75.5</u>	<u>20.7</u>							
107.leslie3d	112	186	28.1	184	28.4	<u>185</u>	<u>28.3</u>							
113.GemsFDTD	112	166	38.0	<u>166</u>	<u>38.0</u>	166	38.0							
115.fds4	112	78.9	24.7	79.8	24.5	<u>79.2</u>	<u>24.6</u>							
121.pop2	112	134	30.8	<u>134</u>	<u>30.8</u>	134	30.8							
122.tachyon	112	86.8	32.2	<u>85.7</u>	<u>32.7</u>	85.5	32.7							
126.lammps	112	<u>111</u>	<u>26.3</u>	111	26.3	111	26.3							
127.wrf2	112	147	53.1	<u>147</u>	<u>53.0</u>	147	52.9							
128.GAPgeofem	112	49.9	41.4	<u>49.7</u>	<u>41.6</u>	49.6	41.6							
129.tera_tf	112	112	24.8	<u>112</u>	<u>24.7</u>	112	24.7							

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 SR650
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

SPECmpiM_base2007 = 34.0

MPI2007 license: 28

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Aug-2017

Results Table (Continued)

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	112	62.9	60.7	<u>62.8</u>	<u>60.8</u>	62.7	60.9							
132.zeusmp2	112	85.8	36.2	85.9	36.1	<u>85.8</u>	<u>36.2</u>							
137.lu	112	79.6	46.2	<u>79.6</u>	<u>46.2</u>	79.4	46.3							

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: Intel Omni-Path
 Total Compute Nodes: 2
 Total Chips: 4
 Total Cores: 112
 Total Threads: 112
 Total Memory: 1536 GB
 Base Ranks Run: 112
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C++ Compiler 17.0 Update 4 for Linux
 Version 17.0.4 Build 20170411
 C++ Compiler: Intel C++ Compiler 17.0 Update 4 for Linux
 Version 17.0.4 Build 20170411
 Fortran Compiler: Intel Fortran Compiler 17.0 Update 4 for Linux
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 MPI Library: Intel MPI Library for Linux* OS
 Version 2017 Update 3 Build 20170405
 Other MPI Info: None
 Pre-processors: No
 Other Software: None

Node Description: ThinkSystem SR650

Hardware

Number of nodes: 2
 Uses of the node: compute
 Vendor: Lenovo Global Technology
 Model: SR650
 CPU Name: Intel Xeon Platinum 8180
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 56
 Cores per chip: 56
 Threads per core: 1
 CPU Characteristics: None
 CPU MHz: 2500
 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: 768 GB (24 x 32 GB 2Rx4 PC4-2666V)
 Disk Subsystem: 800 GB 12 Gbps SAS 2.5" SSD (JBOD)
 Other Hardware: ThinkSystem RAID 930-8i 2GB Flash
 Adapter: Intel Omni-Path Fabric Adapter 100 Series
 Number of Adapters: 1
 Slot Type: PCI-Express x16
 Data Rate: 100 Gb/s

Software

Adapter: Intel Omni-Path Fabric Adapter 100 Series
 Adapter Driver: IFS 10.4.2.0.7
 Adapter Firmware: 10.4.0.0.146
 Operating System: Red Hat Enterprise Linux Server release 7.3,
 Kernel 3.10.0-514.el7.x86_64
 Local File System: xfs
 Shared File System: nfs
 System State: Multi-user
 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 SR650
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

SPECmpiM_base2007 = 34.0

MPI2007 license: 28

Test date: Sep-2017

Test sponsor: Lenovo Global Technology

Hardware Availability: Aug-2017

Tested by: Lenovo Global Technology

Software Availability: Aug-2017

Node Description: ThinkSystem SR650

Ports Used: 1
Interconnect Type: Direct Attached Cable (DAC)

Interconnect Description: Intel Omni-Path

Hardware

Software

Vendor: Intel
Model: Intel Omni-Path Fabric Adapter 100 Series
Switch Model: N/A
Number of Switches: 0
Number of Ports: 0
Data Rate: N/A
Firmware: N/A
Topology: Direct Connect
Primary Use: MPI Traffic

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 2x32GB 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

Base Compiler Invocation

C benchmarks:
mpiicc

C++ benchmarks:

Continued on next page



SPEC MPIM2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR650
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 34.0

MPI2007 license: 28

Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Sep-2017

Hardware Availability: Aug-2017

Software Availability: Aug-2017

Base Compiler Invocation (Continued)

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/Lenovo-SPECmpiM_Platform_Flags.html

http://www.spec.org/mpi2007/flags/EM64T_Intel17_flags.html

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

http://www.spec.org/mpi2007/flags/Lenovo-SPECmpiM_Platform_Flags.xml

http://www.spec.org/mpi2007/flags/EM64T_Intel17_flags.xml



SPEC MPI2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR650
(Intel Xeon Platinum 8180 CPU, 2.50 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 34.0

MPI2007 license: 28

Test sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test date: Sep-2017

Hardware Availability: Aug-2017

Software Availability: Aug-2017

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.

Tested with SPEC MPI2007 v2.0.1.
Report generated on Thu Nov 2 16:40:58 2017 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 2 November 2017.