



SPEC® MPIM2007 Result

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Huawei

SPECmpiM_peak2007 = 57.3

Huawei Kunlun 9008 V5 (Intel Xeon Platinum 8280 CPU, 2.70 GHz)

SPECmpiM_base2007 = 57.3

MPI2007 license: 27

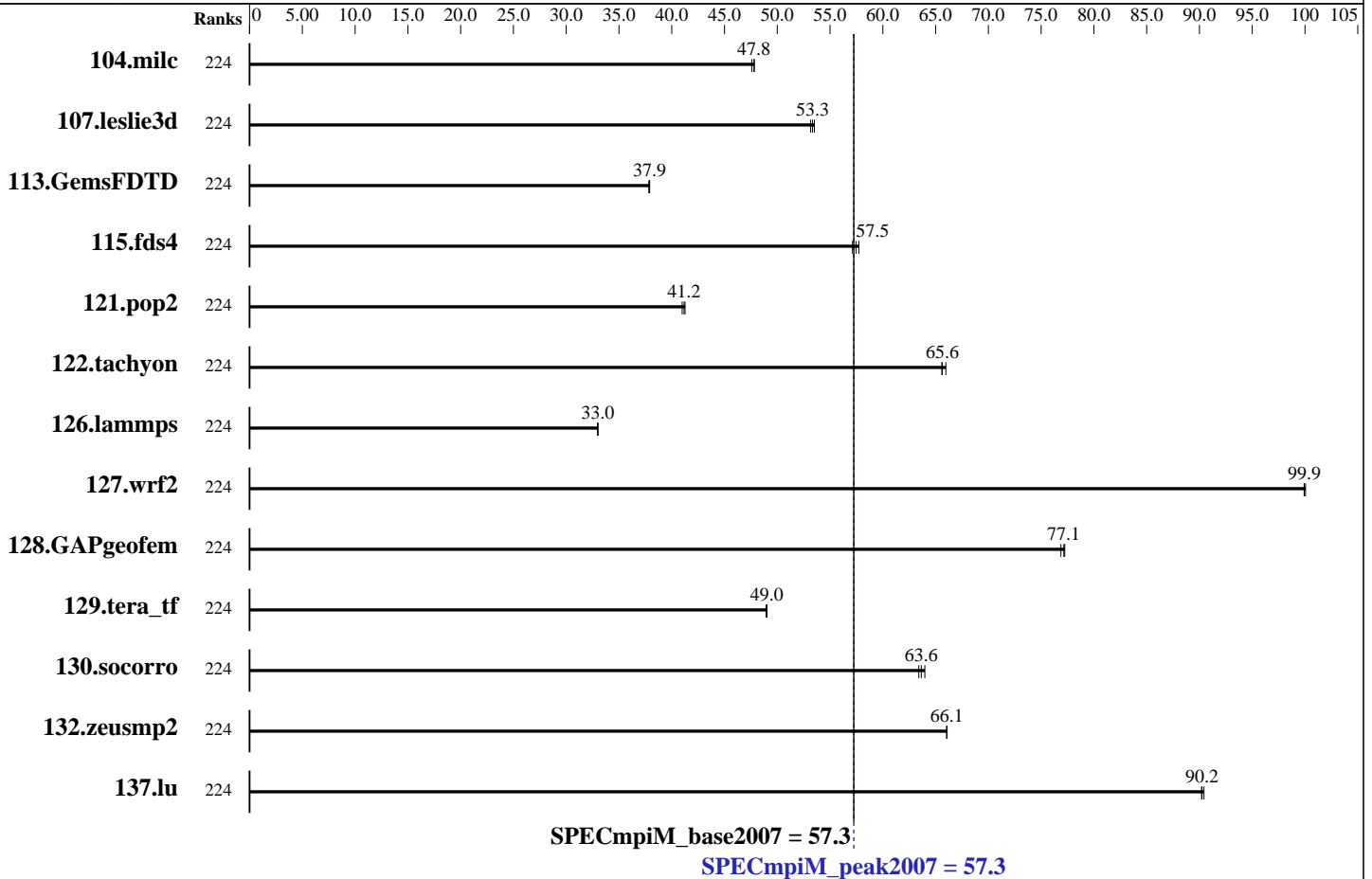
Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2019

Hardware Availability: Jun-2019

Software Availability: Feb-2019



Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	224	32.9	47.6	32.7	47.8	<u>32.7</u>	<u>47.8</u>	224	32.9	47.6	32.7	47.8	<u>32.7</u>	<u>47.8</u>		
107.leslie3d	224	98.2	53.2	97.5	53.5	<u>97.9</u>	<u>53.3</u>	224	98.2	53.2	97.5	53.5	<u>97.9</u>	<u>53.3</u>		
113.GemsFDTD	224	167	37.8	166	37.9	<u>166</u>	<u>37.9</u>	224	167	37.8	166	37.9	<u>166</u>	<u>37.9</u>		
115.fds4	224	33.8	57.7	<u>34.0</u>	<u>57.5</u>	34.2	57.1	224	33.8	57.7	<u>34.0</u>	<u>57.5</u>	34.2	57.1		
121.pop2	224	<u>100</u>	<u>41.2</u>	101	41.0	100	41.3	224	<u>100</u>	<u>41.2</u>	101	41.0	100	41.3		
122.tachyon	224	<u>42.6</u>	<u>65.6</u>	42.6	65.6	42.4	66.0	224	<u>42.6</u>	<u>65.6</u>	42.6	65.6	42.4	66.0		
126.lammps	224	<u>88.3</u>	<u>33.0</u>	88.4	33.0	88.3	33.0	224	<u>88.3</u>	<u>33.0</u>	88.4	33.0	88.3	33.0		
127.wrf2	224	78.0	99.9	<u>78.0</u>	<u>99.9</u>	77.9	100	224	78.0	99.9	<u>78.0</u>	<u>99.9</u>	77.9	100		
128.GAPgeofem	224	26.7	77.2	26.9	76.9	<u>26.8</u>	<u>77.1</u>	224	26.7	77.2	26.9	76.9	<u>26.8</u>	<u>77.1</u>		
129.tera_tf	224	56.6	48.9	56.5	49.0	<u>56.5</u>	<u>49.0</u>	224	56.6	48.9	56.5	49.0	<u>56.5</u>	<u>49.0</u>		

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	224	59.7	64.0	60.0	63.6	60.2	63.4	224	59.7	64.0	60.0	63.6	60.2	63.4
132.zeusmp2	224	<u>47.0</u>	<u>66.1</u>	47.0	66.1	47.0	66.0	224	<u>47.0</u>	<u>66.1</u>	47.0	66.1	47.0	66.0
137.lu	224	40.8	90.2	40.7	90.4	40.7	90.2	224	40.8	90.2	40.7	90.4	40.7	90.2

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: Huawei Kunlun 9008 V5
 File Server Node: Huawei Kunlun 9008 V5
 Head Node: Huawei Kunlun 9008 V5
 Total Compute Nodes: 1
 Total Chips: 8
 Total Cores: 224
 Total Threads: 224
 Total Memory: 1536 GB
 Base Ranks Run: 224
 Minimum Peak Ranks: 224
 Maximum Peak Ranks: 224

Software Summary

C Compiler: Intel C++ Composer XE 2018 for Linux, Version 18.0.5
 C++ Compiler: Intel C++ Composer XE 2018 for Linux, Version 18.0.5
 Fortran Compiler: Intel Fortran Composer XE 2018 for Linux, Version 18.0.5
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 MPI Library: Intel MPI Library for Linux, Version 2018 Update 4
 Other MPI Info: None
 Pre-processors: No
 Other Software: None

Node Description: Huawei Kunlun 9008 V5

Hardware

Number of nodes: 1
 Uses of the node: head, compute, fileserver
 Vendor: Huawei
 Model: Huawei Kunlun 9008 V5
 CPU Name: Intel Xeon Platinum 8280
 CPU(s) orderable: 2,4,6,8 chip
 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 (48 x 32 GB 2Rx4 PC4-2933Y-R)
 Disk Subsystem: 2 x 900 GB 10K RPM SAS HDD, RAID 0
 Other Hardware: None
 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: btrfs
 Shared File System: None
 System State: Multi-User, run level 3
 Other Software: None

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Software Availability: Feb-2019

Node Description: Huawei Kunlun 9008 V5

Ports Used: 0
Interconnect Type: N/A

Submit Notes

The config file option 'submit' was used.

General Notes

MPI startup command:

mpiexec.hydra command was used to start MPI jobs.

BIOS settings:

Intel Hyper-Threading Technology :Disabled

Intel Turbo Boost Technology :Enabled (default is Enabled)

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.

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



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Base Optimization Flags

C benchmarks:

-O3 -xCORE-AVX2 -no-prec-div

C++ benchmarks:

126.lammps: -O3 -xCORE-AVX2 -no-prec-div

Fortran benchmarks:

-O3 -xCORE-AVX2 -no-prec-div

Benchmarks using both Fortran and C:

-O3 -xCORE-AVX2 -no-prec-div

Peak Optimization Flags

C benchmarks:

104.milc: basepeak = yes

122.tachyon: basepeak = yes

C++ benchmarks:

126.lammps: basepeak = yes

Fortran benchmarks:

107.leslie3d: basepeak = yes

113.GemsFDTD: basepeak = yes

129.tera_tf: basepeak = yes

137.lu: basepeak = yes

Benchmarks using both Fortran and C:

115.fds4: basepeak = yes

121.pop2: basepeak = yes

127.wrf2: basepeak = yes

128.GAPgeofem: basepeak = yes

130.socorro: basepeak = yes

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Peak Optimization Flags (Continued)

132.zeusmp2: basepeak = yes

The flags file that was used to format this result can be browsed at

http://www.spec.org/mpi2007/flags/Huawei_x86_64_Intel_linux.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/mpi2007/flags/Huawei_x86_64_Intel_linux.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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