SPEC® MPIM2007 Result

NEC

NEC HPC1812Rg-2 (Intel Xeon E5-2650 v4, 2.20 GHz, DDR4-2400 MHz, SMT ON, Turbo ON)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 7.91

MPI2007 license: 055A	**Test date:** Sep-2017
Test sponsor: RWTH University Aachen	**Hardware Availability:** Oct-2016
Tested by: Bo Wang	**Software Availability:** Oct-2016

Ranks 0 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

104.milc 24 — 5.83

107.leslie3d 24 — 7.57

113.GemsFDTD 24 — 9.84

115.fds4 24 — 8.18

121.pop2 24 — 10.2

122.tachyon 24 — 5.13

126.lammps 24 — 4.58

127.wrf2 24 — 13.3

128.GAPgeofem 24 — 8.76

129.tera_tf 24 — 6.20

130.socorro 24 — 19.0

132.zeusmp2 24 — 7.24

137.lu 24 — 5.55

SPECmpiM_base2007 = 7.91
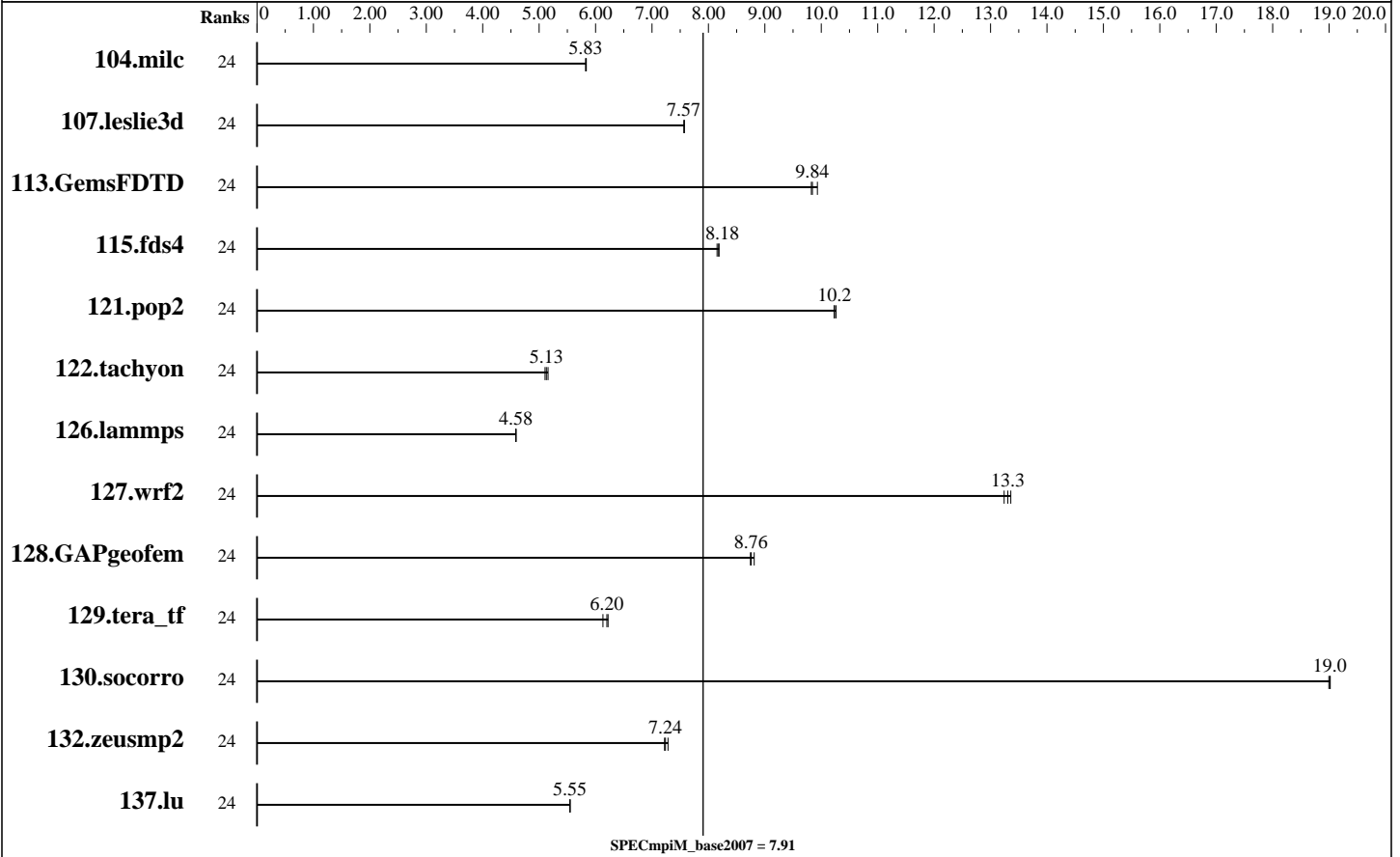
Results Table

Benchmark	Ranks	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Ranks	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
104.milc	24	269	5.83	268	5.84	**269**	**5.83**							
107.leslie3d	24	**690**	**7.57**	690	7.57	689	7.57							
113.GemsFDTD	24	**641**	**9.84**	642	9.82	635	9.93							
115.fds4	24	**239**	**8.18**	239	8.15	238	8.19							
121.pop2	24	**403**	**10.2**	402	10.3	404	10.2							
122.tachyon	24	542	5.16	548	5.10	**545**	**5.13**							
126.lammps	24	634	4.59	636	4.58	**636**	**4.58**							
127.wrf2	24	589	13.2	584	13.4	**586**	**13.3**							
128.GAPgeofem	24	234	8.81	**236**	**8.76**	236	8.74							
129.tera_tf	24	**446**	**6.20**	445	6.22	451	6.13							

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

NEC

NEC HPC1812Rg-2 (Intel Xeon E5-2650 v4, 2.20 GHz, DDR4-2400 MHz, SMT ON, Turbo ON)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 7.91

MPI2007 license: 055A
Test sponsor: RWTH University Aachen
Tested by: Bo Wang

Test date: Sep-2017
Hardware Availability: Oct-2016
Software Availability: Oct-2016

Results Table (Continued)

Benchmark	Ranks	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	24	201	19.0	201	19.0	**201**	**19.0**							
132.zeusmp2	24	426	7.28	**429**	**7.24**	430	7.22							
137.lu	24	663	5.55	**663**	**5.55**	663	5.55							

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: NEC HPC
Interconnects: Omni-Path Architecture(MPI)
                         Gigabit Ethernet(I/O)
File Server Node: NFSv3
Total Compute Nodes: 1
Total Chips: 2
Total Cores: 24
Total Threads: 48
Total Memory: 128 GB
Base Ranks Run: 24
Minimum Peak Ranks: --
Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C++ Composer XE 2017 for Linux, Version 17.0.2.174
C++ Compiler: Intel C++ Composer XE 2017 for Linux, Version 17.0.2.174
Fortran Compiler: Intel Fortran Composer XE 2017 for Linux, Version 17.0.2.174
Base Pointers: 64-bit
Peak Pointers: 64-bit
MPI Library: Intel MPI Library 2017 for Linux, Version 2017.1.132
Other MPI Info: None
Pre-processors: No
Other Software: None

Node Description: NEC HPC

Hardware

Number of nodes: 1
Uses of the node: compute
Vendor: Intel
Model: NEC HPC 1812Rg
CPU Name: Intel Xeon E5-2650 v4
CPU(s) orderable: 1-2 chips
Chips enabled: 2
Cores enabled: 24
Cores per chip: 12
Threads per core: 2
CPU Characteristics: 12 core, 2.2 GHz, 9.6 GT/s QPI
                      Intel Turbo Boost Technology up to 2.9 GHz
                      Hyper-Threading Technology enabled
CPU MHz: 2200
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 30 MB I+D on chip per chip
                      shared / 12 cores
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx8 PC4-2400T-R)
Disk Subsystem: SATA, Samsung SM863, 120GB, SSD
Other Hardware: None
Adapter: Intel Omni-Path Host Fabric Interface Adapter 100 Series 1 Port PCIe x8

Software

Adapter: Intel Omni-Path Host Fabric Interface Adapter 100 Series 1 Port PCIe x8
Adapter Driver: Intel Omni-Path Host Fabric Interface
Adapter Firmware: 2.33.5100
Operating System: CentOS Linux release 7.3.1611 (Core) Kernel 3.10.0-514.26.1.el7.x86_64
Local File System: Linux/xfs
Shared File System: NFSv3
System State: Multi-User, run level 3
Other Software: None

Continued on next page

SPEC MPIM2007 Result
Copyright 2006-2010 Standard Performance Evaluation Corporation

NEC

NEC HPC1812Rg-2 (Intel Xeon E5-2650 v4, 2.20 GHz, DDR4-2400 MHz, SMT ON, Turbo ON)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 7.91

MPI2007 license: 055A
Test sponsor: RWTH University Aachen
Tested by: Bo Wang

Test date: Sep-2017
Hardware Availability: Oct-2016
Software Availability: Oct-2016

Node Description: NEC HPC

Number of Adapters:	1
Slot Type:	PCI-E x8
Data Rate:	58Gb/s
Ports Used:	1
Interconnect Type:	Omni-Path

Node Description: NFSv3

Hardware

Number of nodes:	1
Uses of the node:	fileserver
Vendor:	NETAPP
Model:	FAS6240
CPU Name:	Intel Xeon CPU X5670
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	12
Cores per chip:	6
Threads per core:	2
CPU Characteristics:	None
CPU MHz:	2930
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB
Disk Subsystem:	216 disks, 2 TB/disk, 432TB total
Other Hardware:	None
Adapter:	10 Gigabit Ethernet Controller IX1-SFP+
Number of Adapters:	2
Slot Type:	PCI-Express x8
Data Rate:	10Gbps Ethernet
Ports Used:	2
Interconnect Type:	Ethernet

Software

Adapter:	10 Gigabit Ethernet Controller IX1-SFP+
Adapter Driver:	N/A
Adapter Firmware:	1.8-0
Operating System:	NetApp Release 8.2.3P2 7-Mode
Local File System:	None
Shared File System:	NFSv3
System State:	Multi-User, run level 3
Other Software:	None

Interconnect Description: Omni-Path Architecture(MPI)

Hardware

Vendor:	Intel
Model:	Intel Omni-Path 100 Series
Switch Model:	Intel Omni-Path 100 Series
Number of Switches:	25
Number of Ports:	48
Data Rate:	100Gbps

Software

SPEC MPIM2007 Result
Copyright 2006-2010 Standard Performance Evaluation Corporation

NEC

NEC HPC1812Rg-2 (Intel Xeon E5-2650 v4, 2.20 GHz, DDR4-2400 MHz, SMT ON, Turbo ON)

$SPECmpiM\_peak2007 =$ Not Run

$SPECmpiM\_base2007 =$ 7.91

MPI2007 license: 055A
Test sponsor: RWTH University Aachen
Tested by: Bo Wang

Test date: Sep-2017
Hardware Availability: Oct-2016
Software Availability: Oct-2016

Interconnect Description: Omni-Path Architecture(MPI)

Firmware: 10.3.0.0.81
Topology: 2:1 Blocking Fat tree
Primary Use: MPI traffic

Interconnect Description: Gigabit Ethernet(I/O)

Hardware

Vendor: Cisco
Model: Ethernet 40 Gbps
Switch Model: Cisco Nexus5020, N5K-C5020P-BF
Number of Switches: 1
Number of Ports: 96
Data Rate: 40Gbps
Firmware: 5.2(1)N1(9a)
Topology: Star
Primary Use: Cluster File System

Software

Submit Notes

The config file option 'submit' was used.

General Notes

130.socorro (base): "nullify_ptrs" src.alt was used.

Base Compiler Invocation

C benchmarks:
     mpiicc

C++ benchmarks:

     126.lammps: mpiicpc

Fortran benchmarks:
     mpiifort

Benchmarks using both Fortran and C:
     mpiicc mpiifort

SPEC MPIM2007 Result
Copyright 2006-2010 Standard Performance Evaluation Corporation

NEC

NEC HPC1812Rg-2 (Intel Xeon E5-2650 v4, 2.20 GHz, DDR4-2400 MHz, SMT ON, Turbo ON)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 =   7.91

MPI2007 license: 055A
Test sponsor: RWTH University Aachen
Tested by: Bo Wang

Test date: Sep-2017
Hardware Availability: Oct-2016
Software Availability: Oct-2016

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 -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
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/RWTH-Aachen-CLAIX-MPI-2017-SEP.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/RWTH-Aachen-CLAIX-MPI-2017-SEP.xml

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.
Report generated on Wed Oct 18 13:13:40 2017 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 18 October 2017.