



SPEC® MPIL2007 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)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 33.5

MPI2007 license: 055A

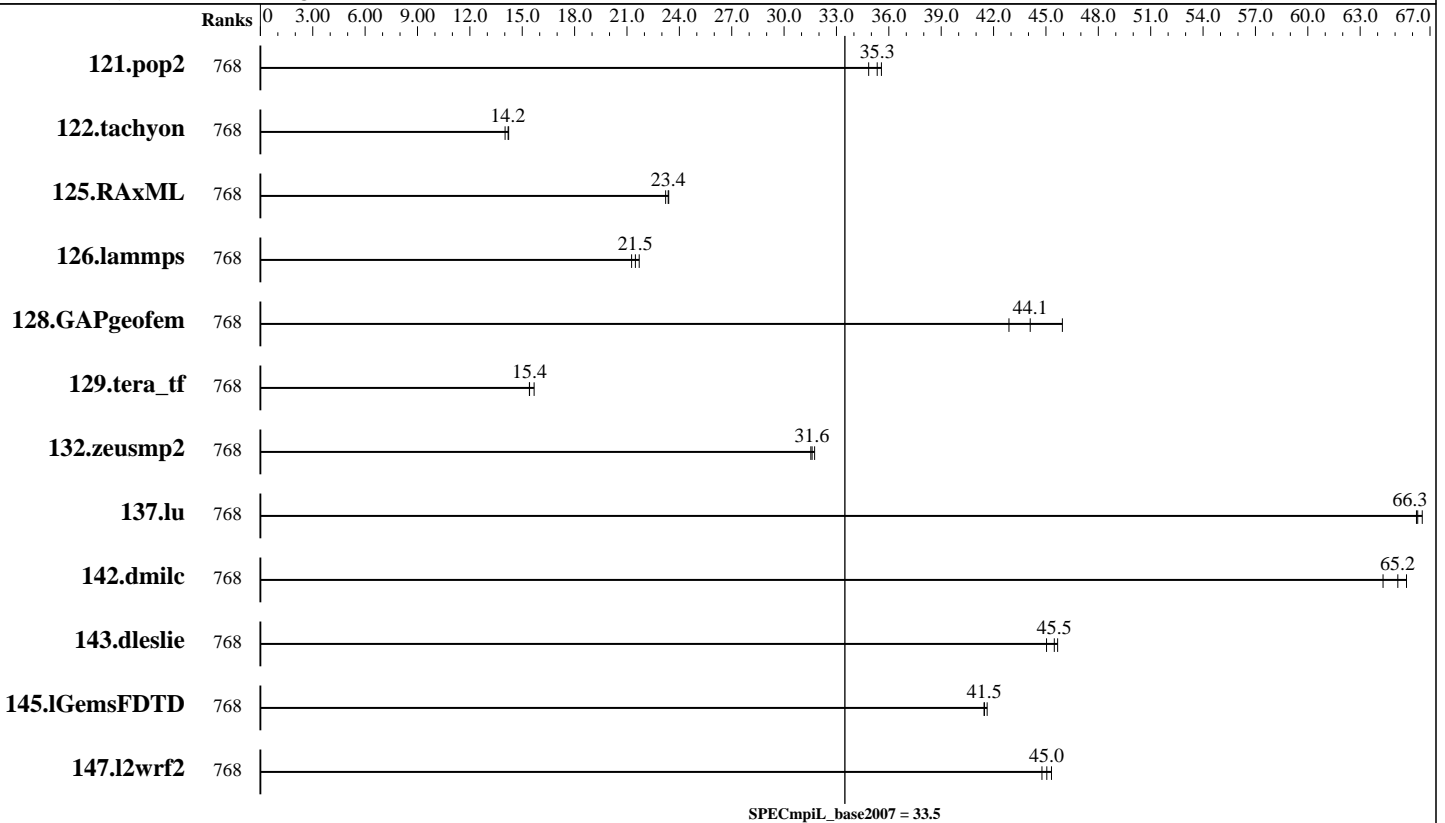
Test sponsor: RWTH University Aachen

Tested by: Bo Wang

Test date: Sep-2017

Hardware Availability: Oct-2016

Software Availability: Oct-2016



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
121.pop2	768	112	34.8	110	35.3	109	35.6							
122.tachyon	768	137	14.2	137	14.2	139	14.0							
125.RAxML	768	125	23.4	125	23.4	126	23.2							
126.lammps	768	114	21.5	116	21.3	113	21.7							
128.GAPgeofem	768	138	42.9	135	44.1	129	45.9							
129.tera_tf	768	70.1	15.7	71.3	15.4	71.3	15.4							
132.zeusmp2	768	66.8	31.7	67.2	31.5	67.1	31.6							
137.lu	768	63.1	66.6	63.4	66.3	63.5	66.2							
142.dmilc	768	57.3	64.3	56.5	65.2	56.1	65.7							
143.dleslie	768	68.8	45.0	67.9	45.7	68.2	45.5							
145.lGemsFDTD	768	106	41.5	106	41.6	106	41.5							
147.l2wrf2	768	181	45.3	182	45.0	183	44.8							

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

NEC

SPECmpiL_peak2007 = Not Run

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

SPECmpiL_base2007 = 33.5

MPI2007 license: 055A

Test date: Sep-2017

Test sponsor: RWTH University Aachen

Hardware Availability: Oct-2016

Tested by: Bo Wang

Software Availability: Oct-2016

Hardware Summary

Type of System: Homogeneous
 Compute Node: NEC HPC
 Interconnects: Omni-Path Architecture
 Gigabit Ethernet
 File Server Node: NFS
 Total Compute Nodes: 32
 Total Chips: 64
 Total Cores: 768
 Total Threads: 1536
 Total Memory: 4 TB
 Base Ranks Run: 768
 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: 32
 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: Intel Turbo Boost Technology up to 2.9 GHz (single)/2.2 GHz (all), 9.6 GT/s QPI, Hyper-Threading 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
 Number of Adapters: 1
 Slot Type: PCI-E x8
 Data Rate: 58Gb/s
 Ports Used: 1
 Interconnect Type: Omni-Path

Software

Adapter: Intel Omni-Path Host Fabric Interface Adapter 100 Series 1 Port PCIe X8
 Adapter Driver: hfi1
 Adapter Firmware: 2.33.5100
 Operating System: CentOS Linux release 7.3.1611 (Core)
 Local File System: Linux/xfs
 Shared File System: NFS
 System State: Multi-User
 Other Software: None



SPEC MPIL2007 Result

Copyright 2006-2010 Standard Performance Evaluation Corporation

NEC

SPECmpiL_peak2007 = Not Run

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

SPECmpiL_base2007 = 33.5

MPI2007 license: 055A

Test date: Sep-2017

Test sponsor: RWTH University Aachen

Hardware Availability: Oct-2016

Tested by: Bo Wang

Software Availability: Oct-2016

Node Description: NFS

Hardware		Software	
Number of nodes:	1	Adapter:	10 Gigabit Ethernet Controller
Uses of the node:	fileserver		IX1-SFP+
Vendor:	NETAPP	Adapter Driver:	N/A
Model:	FAS6240	Adapter Firmware:	1.8-0
CPU Name:	Intel Xeon CPU X5670	Operating System:	NetApp Release 8.2.3P2 7-Mode
CPU(s) orderable:	1-2 chips	Local File System:	None
Chips enabled:	2	Shared File System:	NFS
Cores enabled:	12	System State:	Multi-User
Cores per chip:	6	Other Software:	None
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		

Interconnect Description: Omni-Path Architecture

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



SPEC MPIL2007 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)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 33.5

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: Gigabit Ethernet

Hardware		Software
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	

Submit Notes

The config file option 'submit' was used.

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

Base Optimization Flags

C benchmarks:
-O3 -xCORE-AVX2 -no-prec-div

C++ benchmarks:

Continued on next page



SPEC MPIL2007 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)

SPECmpiL_peak2007 = Not Run

SPECmpiL_base2007 = 33.5

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 Optimization Flags (Continued)

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 4 12:53:48 2017 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 4 October 2017.