



SPEC® MPIM2007 Result

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Gateway

SPECmpiM_peak2007 = Not Run

GW2000h-GW170hq (Intel Xeon X5570, 2.93 GHz)

SPECmpiM_base2007 = 14.2

MPI2007 license: 4113

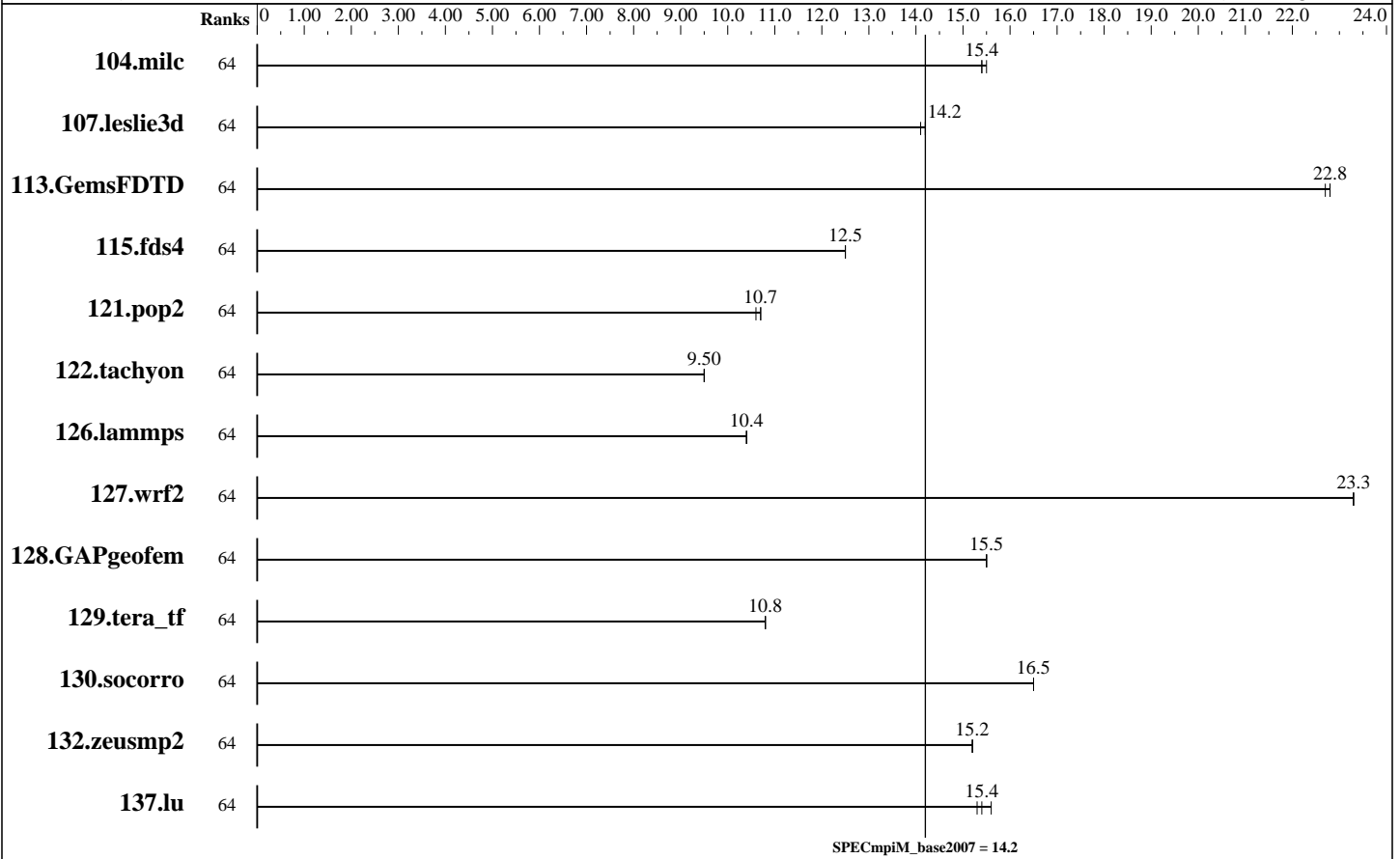
Test date: Mar-2011

Test sponsor: Fraunhofer SCAI

Hardware Availability: Jan-2010

Tested by: Steffen Claus

Software Availability: Aug-2010



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	64	101	15.4	101	15.4	101	15.5							
107.leslie3d	64	369	14.1	368	14.2	368	14.2							
113.GemsFDTD	64	278	22.7	277	22.8	277	22.8							
115.fds4	64	156	12.5	156	12.5	156	12.5							
121.pop2	64	388	10.7	387	10.7	388	10.6							
122.tachyon	64	295	9.50	295	9.50	295	9.50							
126.lammps	64	281	10.4	281	10.4	281	10.4							
127.wrf2	64	334	23.3	334	23.3	334	23.3							
128.GAPgeofem	64	133	15.5	134	15.5	133	15.5							
129.tera_tf	64	257	10.8	257	10.8	257	10.8							

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	64	231	16.5	231	16.5	<u>231</u>	<u>16.5</u>							
132.zeusmp2	64	<u>204</u>	<u>15.2</u>	205	15.2	204	15.2							
137.lu	64	240	15.3	<u>238</u>	<u>15.4</u>	236	15.6							

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: Gateway GW2000h
 Interconnects: Infiniband Switch
 Ethernet Switch
 Total Compute Nodes: 8
 Total Chips: 16
 Total Cores: 64
 Total Threads: 64
 Total Memory: 192 GB
 Base Ranks Run: 64
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C++ Compiler 11.1 for Windows (11.1.067)
 C++ Compiler: Intel C++ Compiler 11.1 for Windows (11.1.067)
 Fortran Compiler: Intel Fortran Compiler 11.1 for Windows (11.1.067)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: MS MPI Version 4.0 Update 1 Build 8/18/2010
 Other MPI Info: --
 Pre-processors: No
 Other Software: --

Node Description: Gateway GW2000h

Hardware

Number of nodes: 8
 Uses of the node: compute
 Vendor: Gateway
 Model: GW2000h-GW170hq
 CPU Name: Intel Xeon X5570 @ 2.93 GHz
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 8
 Cores per chip: 4
 Threads per core: 1
 CPU Characteristics: --
 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: 8 MB I+D on chip per chip, 8 MB shared / 4 cores
 Other Cache: None
 Memory: 24 GB
 Disk Subsystem: --
 Other Hardware: None
 Adapter: Intel 82574L Gigabit Network Connection
 Number of Adapters: 2
 Slot Type: onboard
 Data Rate: Gigabit Ethernet
 Ports Used: 1

Software

Adapter: Intel 82574L Gigabit Network Connection
 Adapter Driver: --
 Adapter Firmware: --
 Adapter: Mellanox Technologies MT26418
 Adapter Driver: Mellanox WinOF (v. 2.1.2)
 Adapter Firmware: 2.7.200
 Operating System: Windows HPC Server 2008 R2
 Service Pack 1
 Local File System: --
 Shared File System: Network shared Ramdisk
 System State: --
 Other Software: --

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Node Description: Gateway GW2000h

Interconnect Type:	Ethernet
Adapter:	Mellanox Technologies MT26418
Number of Adapters:	1
Slot Type:	onboard
Data Rate:	QDR
Ports Used:	1
Interconnect Type:	InfiniBand

Interconnect Description: Infiniband Switch

	Hardware	Software
Vendor:	Mellanox	
Model:	MTS3600	
Switch Model:	Mellanox MTS3600	
Number of Switches:	1	
Number of Ports:	36	
Data Rate:	QDR	
Firmware:	EFM_PPC_405EX	
Topology:	Single switch	
Primary Use:	MPI traffic	

Interconnect Description: Ethernet Switch

	Hardware	Software
Vendor:	Extreme Networks	
Model:	Summit	
Switch Model:	Summit X450-24 t	
Number of Switches:	1	
Number of Ports:	24	
Data Rate:	Gigabit Ethernet	
Firmware:	ExtremeWare XOS 11.4.3.4 v1143b4	
Topology:	Single Switch	
Primary Use:	CIFS traffic	

Submit Notes

The config file option 'submit' was used.

General Notes

MPI startup command:

mpiexec command was used to start MPI jobs. This command starts an independent ring of mpd daemons, launches an MPI job, and shuts down the mpd ring upon the job termination.

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General Notes (Continued)

Batch system:

The internal Job Scheduler of Windows HPC Server 2008 was used.

BIOS settings:

Intel Hyper-Threading Technology (SMT): Disabled (default is Enabled)

Intel Turbo Boost Technology (Turbo) : Enabled (default is Enabled)

RAM configuration:

Compute nodes have 6x4-GB dual rank DDR3-1333 RAM.

Head node has 4x2GB single rank DDR2-667 RAM.

Network:

Windows HPC Server topology no. 3. Head node and all compute nodes are interconnected by 1GB Ethernet and QDR Infiniband. Each interconnect type has one single switch.

Base Compiler Invocation

C benchmarks:

icl

C++ benchmarks:

126.lammps: icl

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl ifort

Base Portability Flags

```
115.fds4: /DSPEC_MPI_UC_NO_TRAILING_UNDERSCORE /fpscomp:general
121.pop2: /DSPEC_MPI_WINDOWS_ICL
127.wrf2: /DSPEC_MPI_WINDOWS_ICL /DSPEC_MPI_COMM_F2C
        /DSPEC_MPI_CASE_FLAG /us /Qlowercase
129.tera_tf: /fpscomp:general
130.socorro: /DSPEC_NO_UNDERSCORE /DSPEC_MPI_COMM_F2C /Qlowercase
132.zeusmp2: /DSPEC_MPI_WINDOWS_ICL /fpscomp:general
```

Base Optimization Flags

C benchmarks:

/O3 /QxSSE4.2 /Qipo /Qprec-div- /F3950000000

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Base Optimization Flags (Continued)

C++ benchmarks:

126.lammps: /O3 /QxSSE4.2 /Qipo /Qprec-div- /F3950000000

Fortran benchmarks:

/O3 /QxSSE4.2 /Qipo /Qprec-div- /F3950000000

Benchmarks using both Fortran and C:

/O3 /QxSSE4.2 /Qipo /Qprec-div- /F3950000000

Base Other Flags

C benchmarks:

/I:C:/Program Files/Microsoft HPC Pack 2008 SDK/Include /link
/libpath:C:/Program Files/Microsoft HPC Pack 2008 SDK/Lib/amd64 msmtpifec.lib msmtpifmc.lib msmpl.lib
/out:options.exe

C++ benchmarks:

126.lammps: /I:C:/Program Files/Microsoft HPC Pack 2008 SDK/Include /link
/libpath:C:/Program Files/Microsoft HPC Pack 2008 SDK/Lib/amd64 msmtpifec.lib msmtpifmc.lib msmpl.lib
/out:options.exe

Fortran benchmarks:

/I:C:/Program Files/Microsoft HPC Pack 2008 SDK/Include /link
/libpath:C:/Program Files/Microsoft HPC Pack 2008 SDK/Lib/amd64 msmtpifec.lib msmtpifmc.lib msmpl.lib
/out:options.exe

Benchmarks using both Fortran and C:

/I:C:/Program Files/Microsoft HPC Pack 2008 SDK/Include /link
/libpath:C:/Program Files/Microsoft HPC Pack 2008 SDK/Lib/amd64 msmtpifec.lib msmtpifmc.lib msmpl.lib
/out:options.exe

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

<http://www.spec.org/mpi2007/flags/dell.ic10.windows.flags.20120720.html>

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

<http://www.spec.org/mpi2007/flags/dell.ic10.windows.flags.20120720.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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