



SPEC® MPIM2007 Result

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Gateway

SPECmpiM_peak2007 = Not Run

GW2000h-GW170hq (Intel Xeon X5570, 2.93 Ghz)

SPECmpiM_base2007 = 7.42

MPI2007 license: 4113

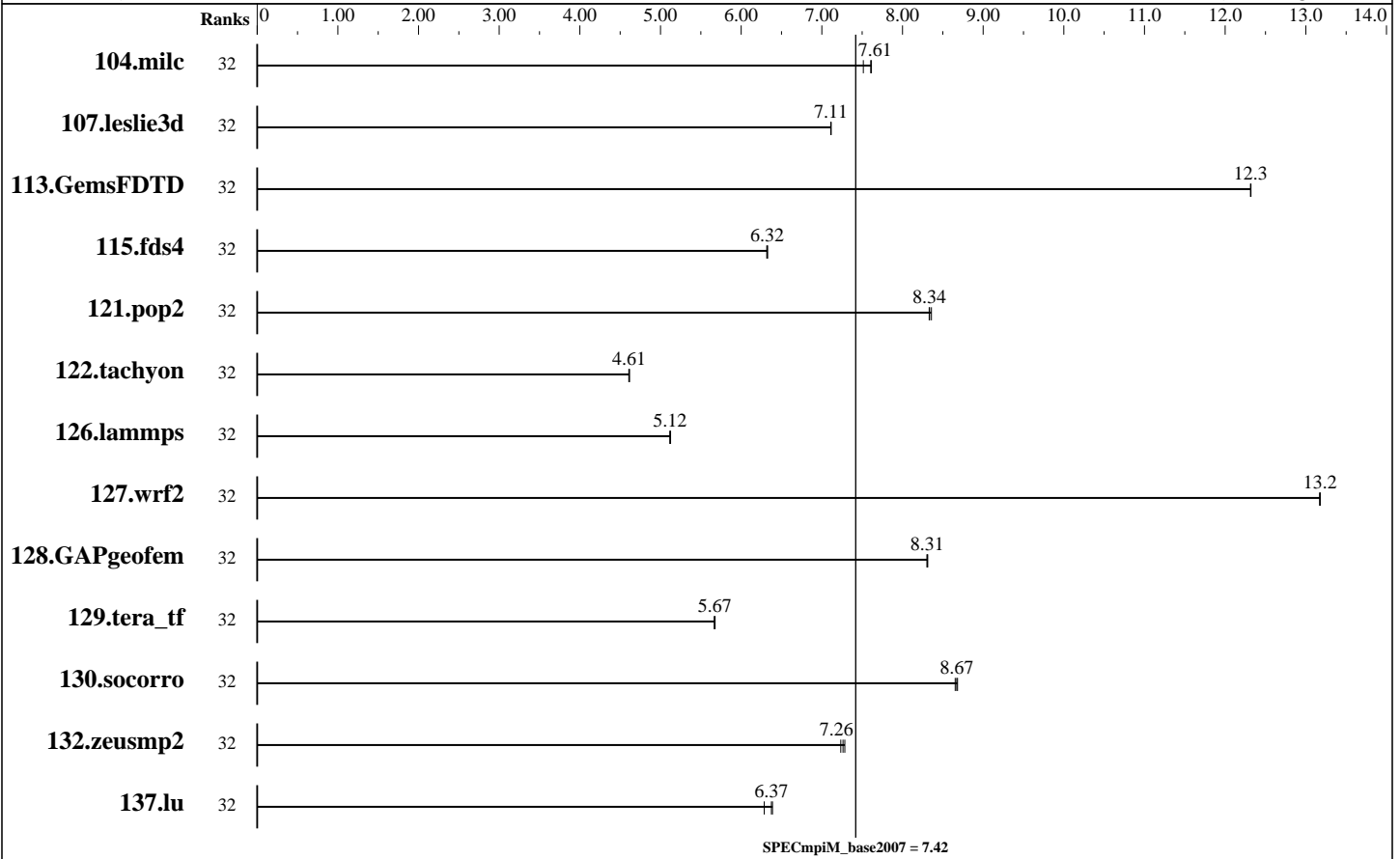
Test sponsor: Fraunhofer SCAI

Tested by: Steffen Claus

Test date: Jan-2011

Hardware Availability: Jan-2010

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 | 32 | 208 | 7.51 | 206 | 7.62 | 206 | 7.61 | | | | | | | | | |
| 107.leslie3d | 32 | 734 | 7.11 | 734 | 7.11 | 734 | 7.11 | | | | | | | | | |
| 113.GemsFDTD | 32 | 512 | 12.3 | 512 | 12.3 | 512 | 12.3 | | | | | | | | | |
| 115.fds4 | 32 | 308 | 6.32 | 309 | 6.32 | 308 | 6.33 | | | | | | | | | |
| 121.pop2 | 32 | 495 | 8.33 | 494 | 8.36 | 495 | 8.34 | | | | | | | | | |
| 122.tachyon | 32 | 607 | 4.61 | 606 | 4.61 | 606 | 4.61 | | | | | | | | | |
| 126.lammgs | 32 | 569 | 5.12 | 569 | 5.13 | 570 | 5.12 | | | | | | | | | |
| 127.wrf2 | 32 | 592 | 13.2 | 592 | 13.2 | 592 | 13.2 | | | | | | | | | |
| 128.GAPgeofem | 32 | 249 | 8.30 | 249 | 8.31 | 248 | 8.31 | | | | | | | | | |
| 129.tera_tf | 32 | 488 | 5.68 | 489 | 5.67 | 488 | 5.67 | | | | | | | | | |

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 | 32 | 441 | 8.65 | 440 | 8.67 | 440 | 8.68 | | | | | | | | | |
| 132.zeusmp2 | 32 | 427 | 7.26 | 426 | 7.28 | 429 | 7.23 | | | | | | | | | |
| 137.lu | 32 | 577 | 6.37 | 585 | 6.29 | 575 | 6.39 | | | | | | | | | |

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: 4
 Total Chips: 8
 Total Cores: 32
 Total Threads: 32
 Total Memory: 96 GB
 Base Ranks Run: 32
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C++ Compiler 11.1 for Linux (11.1.073)
 C++ Compiler: Intel C++ Compiler 11.1 for Linux (11.1.073)
 Fortran Compiler: Intel Fortran Compiler 11.1 for Linux (11.1.073)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 MPI Library: Intel MPI 4.0.0.028
 Other MPI Info: --
 Pre-processors: --
 Other Software: --

Node Description: Gateway GW2000h

Hardware

Number of nodes: 4
 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: Mellanox Technologies MT26418
 Number of Adapters: 1
 Slot Type: onboard
 Data Rate: QDR
 Ports Used: 1

Software

Adapter: Mellanox Technologies MT26418
 Adapter Driver: OFED 1.5.1
 Adapter Firmware: 2.7.200
 Adapter: Intel 82574L Gigabit Network Connection
 Adapter Driver: --
 Adapter Firmware: --
 Operating System: SLES 11
 Local File System: --
 Shared File System: Network shared Ramdisk
 System State: --
 Other Software: --

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Node Description: Gateway GW2000h

| | |
|---------------------|---|
| Interconnect Type: | InfiniBand |
| Adapter: | Intel 82574L Gigabit Network Connection |
| Number of Adapters: | 2 |
| Slot Type: | onboard |
| Data Rate: | Gigabit Ethernet |
| Ports Used: | 1 |
| Interconnect Type: | Ethernet |

Interconnect Description: Infiniband Switch

| Hardware | |
|---------------------|------------------|
| 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 |

Software

Interconnect Description: Ethernet Switch

| Hardware | |
|---------------------|----------------------------------|
| 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: | NFS traffic |

Software

Submit Notes

The config file option 'submit' was used.

General Notes

MPI startup command:

mpirun 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)

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:

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:

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

Base Optimization Flags

C benchmarks:

-O3 -xSSE4.2 -ipo -no-prec-div

C++ benchmarks:

126.lammps: -O3 -xSSE4.2 -ipo -no-prec-div

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Base Optimization Flags (Continued)

Fortran benchmarks:

-O3 -xSSE4.2 -ipo -no-prec-div

Benchmarks using both Fortran and C:

-O3 -xSSE4.2 -ipo -no-prec-div

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

http://www.spec.org/mpi2007/flags/EM64T_Intel111_flags.20100202.html

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

http://www.spec.org/mpi2007/flags/EM64T_Intel111_flags.20100202.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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