**Gateway**

GW2000h-GW170hq (Intel Xeon X5570, 2.93 GHz)

**SPECmpiM_peak2007 = Not Run**

**SPECmpiM_base2007 = 3.70**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Ranks</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Ranks</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
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</table>

Results Table

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**

**Gateway**

GW2000h-GW170hq (Intel Xeon X5570, 2.93 GHz)

---

**SPECmpiM_peak2007 = Not Run**

**SPECmpiM_base2007 = 3.70**

---

**Results Table (Continued)**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Ranks</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak Ranks</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>4.60</td>
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<td>1152</td>
<td>3.20</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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

Total Compute Nodes: 2

Total Chips: 4

Total Cores: 16

Total Threads: 16

Total Memory: 48 GB

Base Ranks Run: 16

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: 2

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: --

---

Continued on next page
SPEC MPIIM2007 Result

Gateway

GW2000h-GW170hq (Intel Xeon X5570, 2.93 GHz)

SPECmpiM_peak2007 = Not Run
SPECmpiM_base2007 = 3.70

MPI2007 license: 4113
Test sponsor: Fraunhofer SCAI
Tested by: Steffen Claus
Test date: Mar-2011
Hardware Availability: Jan-2010
Software Availability: Aug-2010

Node Description: Gateway GW2000h

<table>
<thead>
<tr>
<th>Interconnect Type:</th>
<th>Ethernet</th>
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<td>Adapter:</td>
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<tr>
<td>Slot Type:</td>
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<tr>
<td>Data Rate:</td>
<td>QDR</td>
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<tr>
<td>Ports Used:</td>
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<tr>
<td>Interconnect Type:</td>
<td>InfiniBand</td>
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</table>

Interconnect Description: Infiniband Switch

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<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
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</thead>
<tbody>
<tr>
<td>Vendor:</td>
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<tr>
<td>Model:</td>
<td>MTS3600</td>
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<tr>
<td>Switch Model:</td>
<td>Mellanox MTS3600</td>
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<tr>
<td>Number of Ports:</td>
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<tr>
<td>Data Rate:</td>
<td>QDR</td>
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<tr>
<td>Firmware:</td>
<td>EFM_PPC_405EX</td>
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<tr>
<td>Topology:</td>
<td>Single switch</td>
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<tr>
<td>Primary Use:</td>
<td>MPI traffic</td>
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</table>

Interconnect Description: Ethernet Switch

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
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<tbody>
<tr>
<td>Vendor:</td>
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<tr>
<td>Model:</td>
<td>Summit</td>
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<tr>
<td>Switch Model:</td>
<td>Summit X450-24 t</td>
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<td>Number of Switches:</td>
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<td>Number of Ports:</td>
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<tr>
<td>Data Rate:</td>
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<td>Firmware:</td>
<td>ExtremeWare XOS 11.4.3.4 v1143b4</td>
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<tr>
<td>Topology:</td>
<td>Single Switch</td>
</tr>
<tr>
<td>Primary Use:</td>
<td>CIFS traffic</td>
</tr>
</tbody>
</table>

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.

Continued on next page
Gateway

GW2000h-GW170hq (Intel Xeon X5570, 2.93 GHz)

SPECmpiM_peak2007 = Not Run
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Test sponsor: Fraunhofer SCAI
Tested by: Steffen Claus

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_t: /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

Continued on next page
Gateway
GW2000h-GW170hq (Intel Xeon X5570, 2.93 GHz)

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Tested by: Steffen Claus

Test date: Mar-2011
Hardware Availability: Jan-2010
Software Availability: Aug-2010

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 msmpifec.lib msmpifmc.lib msmpi.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 msmpifec.lib msmpifmc.lib msmpi.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 msmpifec.lib msmpifmc.lib msmpi.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 msmpifec.lib msmpifmc.lib msmpi.lib
/out:options.exe

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

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

**SPECmpiM_peak2007** = Not Run

**SPECmpiM_base2007** = 3.70

<table>
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<th>Specification</th>
<th>Value</th>
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<td>Fraunhofer SCAI</td>
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<tr>
<td>Tested by</td>
<td>Steffen Claus</td>
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</table>

**GW2000h-GW170hq (Intel Xeon X5570, 2.93 GHz)**

**Test date:** Mar-2011

**Hardware Availability:** Jan-2010

**Software Availability:** Aug-2010

---

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For questions about this result, please contact the tester.

For other inquiries, please contact webmaster@spec.org.

Tested with SPEC MPI2007 v2.0.


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