**SPEC® MPI2007 Result**

**IBM Corporation**  
**IBM Power 575**  

**SPECmpiM_peak2007 = 11.4**  
**SPECmpiM_base2007 = 11.4**

**MPI2007 license:** 0005  
**Test date:** Jun-2008

**Test sponsor:** IBM Corporation  
**Hardware Availability:** May-2008

**Tested by:** IBM Corporation  
**Software Availability:** May-2008

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Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
**IBM Corporation**

**IBM Power 575**

**SPECmpiM_result**

**SPECmpiM_peak2007 = 11.4**

**SPECmpiM_base2007 = 11.4**

**Hardware Summary**

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</tbody>
</table>

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

**Software Summary**

- **C Compiler:** IBM XL C/C++ Enterprise Edition V9.0
- **C++ Compiler:** IBM XL C/C++ Enterprise Edition V9.0
- **Fortran Compiler:** IBM XL Fortran Enterprise Edition V11.1
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **MPI Library:** IBM Parallel Environment for AIX
- **Operating System:** IBM AIX V5.3
- **Local File System:** AIX/JFS2
- **Shared File System:** NFS over ethernet

**Node Description: IBM Power 575**

**Hardware**

- **Number of nodes:** 1
- **Uses of the node:** compute, head, fileserver
- **Vendor:** IBM Corporation
- **Model:** IBM Power 575
- **CPU Name:** POWER6
- **CPU(s) orderable:** 32 cores
- **Chips enabled:** 16
- **Cores enabled:** 32
- **Threads per core:** 2
- **CPU Characteristics:**
  - **CPU MHz:** 4700
  - **Primary Cache:** 64 KB I + 64 KB D on chip per core
  - **Secondary Cache:** 4 MB I+D on chip per core
  - **L3 Cache:** 32 MB I+D off chip per chip
  - **Other Cache:** None
  - **Memory:** 128 GB (64x2 GB) DDR2 533 MHz
  - **Disk Subsystem:** 1x146 GB SFF SAS, 10K RPM
  - **Other Hardware:** None
  - **Adapter:** Integrated
  - **Number of Adapters:** 1

**Software**

- **Adapter:** Integrated
- **Adapter Driver:** fileset devices.chrp.IBM.lhea.rte 5.3.8.2
- **Adapter Firmware:** --
- **Adapter:** IBM Dual 2-port 4x DDR Host Channel Adapter
- **Adapter Driver:** fileset devices.common.IBM.ib.rte 5.3.8.2
- **Adapter Firmware:** --
- **Operating System:** IBM AIX V5.3
- **Local File System:** AIX/JFS2
- **Shared File System:** NFS over ethernet
- **System State:** Multi-user
- **Other Software:** APAR IZ26983
- **Other Software:** software update for InfiniBand adapter drivers
- **IBA LoadLeveler for AIX:** V3.4.3.2
<table>
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<th><strong>IBM Corporation</strong></th>
<th><strong>SPECmpimM_peak2007 = 11.4</strong></th>
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**MPI2007 license:** 0005  
**Test sponsor:** IBM Corporation  
**Tested by:** IBM Corporation  
**Test date:** Jun-2008  
**Hardware Availability:** May-2008  
**Software Availability:** May-2008

### Node Description: IBM Power 575

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<th><strong>Slot Type:</strong></th>
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<td><strong>Adapter:</strong></td>
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<td><strong>Interconnect Type:</strong></td>
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### Node Description: IBM Power 575

**Hardware**

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  - **Other Cache:** None
- **Memory:** 128 GB (64x2 GB) DDR2 533 MHz
- **Disk Subsystem:**
  - **1x146 GB SFF SAS, 10K RPM**
- **Other Hardware:** None
- **Adapter:** Integrated
- **Number of Adapters:** 1
- **Slot Type:** --
- **Data Rate:** 1 Gbps
- **Ports Used:** 1
- **Interconnect Type:** Gigabit Ethernet
- **Adapter:** IBM Dual 2-port 4x DDR Host Channel Adapter
- **Number of Adapters:** 2
- **Slot Type:** GX++
- **Data Rate:** 4x DDR 20 Gbps
- **Ports Used:** 4
- **Interconnect Type:** DDR InfiniBand

**Software**

- **Adapter:** Integrated
- **Adapter Driver:** fileset devices.chrp.IBM.lhea.rte 5.3.8.2
- **Adapter Firmware:** --
- **Adapter:** IBM Dual 2-port 4x DDR Host Channel Adapter
- **Adapter Driver:** fileset devices.common.IBM.ib.rte 5.3.8.2
- **Adapter Firmware:** --
- **Operating System:** IBM AIX V5.3
- **Local File System:** AIX/JFS2
- **Shared File System:** NFS over ethernet
- **System State:** Multi-user
- **Other Software:**
  - APAR IZ26983 software update for InfiniBand adapter drivers
  - IBM LoadLeveler for AIX V3.4.3.2
SPEC MPIM2007 Result

IBM Corporation
IBM Power 575

SPECMpiM_peak2007 = 11.4
SPECMpiM_base2007 = 11.4

MPI2007 license: 0005
Test sponsor: IBM Corporation
Test date: Jun-2008
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Software Availability: May-2008

Interconnect Description: InfiniBand

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
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</table>
| Vendor: QLogic
| Model: --
| Switch Model: QLogic SilverStorm 9024
| Number of Switches: 2
| Number of Ports: 24
| Data Rate: InfiniBand 4x DDR 20 Gbps
| Firmware: 4.2.1.1.1
| Topology: linear
| Primary Use: MPI Communication

Interconnect Description: Gigabit Ethernet

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
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</thead>
</table>
| Vendor: IBM Corporation
| Model: Cisco Systems WS-C6509-E Catalyst 6500 9-slot Chassis System
| Switch Model: Cisco Systems WS-X6748-GE-TX CEF720 48 port 10/100/1000mb Ethernet card Cisco Systems WS-SUP720-3B 2 ports Supervisor Engine 720 Rev. 5.2
| Number of Switches: 1
| Number of Ports: 48
| Data Rate: 1 Gbps
| Firmware: 01ES330_034_034
| Topology: --
| Primary Use: File system

General Notes

113.GemsFDTD (base): Applied maxprocandstop src.alt
129.tera_tf (base): Applied fixbuffer src.alt
127.wrf2 (base): Applied fixcalling src.alt
all ulimits set to unlimited
"petaskbind.sh" script used to bind each task to a unique processor
POE Environment variables set before executing benchmarks:
CWD = /specmpi/mpi2007-1.0
MP_ADAPTER_USE = shared
MP_EUILIB = us
MP_EUIDEVICE = sn_all
MP_SHARED_MEMORY = yes
MP_SINGLE_THREAD = yes
MP_WAIT_MODE = poll
MP_EAGER_LIMIT = 65536
MP_BUFFER_MEM = 67108864
MP_POLLING_INTERVAL = 80000000
MP_USE_BULK_XFER = yes

Continued on next page
SPEC MPIM2007 Result

IBM Corporation
IBM Power 575

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General Notes (Continued)

MP_BULK_MIN_MSG_SIZE=65536
MP_STDINMODE =none
MP_LABELIO =no
MP_HOSTFILE =$CWD/r35.128-2node
Other Environment variables
MEMORY_AFFINITY =MCM
LDR_CNTRL =DATAPSIZE=64K@TEXTPSIZE=64K@STACKPSIZE=64K
XLFRTEOTPS =intrinthds=1
submit command uses petaskbind.sh script to bind logical processors to ranks
poe $CWD/petaskbind.sh $command -procs $ranks
The Gigabit ethernet switch is shared among many nodes, not just the cluster used in this benchmark.

Base Compiler Invocation

C benchmarks:
/usr/bin/mpcc_r

C++ benchmarks:
126.lammps: /usr/bin/mpcc_r

Fortran benchmarks:
/usr/bin/mpxlf95_r

Benchmarks using both Fortran and C:
/usr/bin/mpcc_r /usr/bin/mpxlf95_r

Base Portability Flags

107.leslie3d: -qfixed
115.fds4: -DSPEC_MPI_LC_NO_TRAILING_UNDERSCORE -qfixed
121.pop2: -DSPEC_MPI_AIX
127.wrf2: -DNOUNDERSCORE -DSPEC_MPI_AIX
130.socorro: -DSPEC_NO_UNDERSCORE -qpluscmt
132.zeusmp2: -qfixed -DSPEC_SINGLE_UNDERSCORE
137.lu: -qfixed

Base Optimization Flags

C benchmarks:
-04 -qarch=pwr6 -qtune=pwr6 -q64

C++ benchmarks:
126.lammps: -04 -qarch=pwr6 -qtune=pwr6 -qstrict -q64

Continued on next page
IBM Corporation  
IBM Power 575

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**Base Optimization Flags (Continued)**

Fortran benchmarks:
-04 -qarch=pwr6 -qtune=pwr6 -qalias=nostd -q64

Benchmarks using both Fortran and C:
-04 -qarch=pwr6 -qtune=pwr6 -qalias=nostd -q64

---

**Base Other Flags**

C benchmarks:
-w -qsuppress=1500-036 -qipa=noobject -qipa=threads

C++ benchmarks:
126.lammps: -w -qsuppress=1500-036 -qipa=noobject -qipa=threads

Fortran benchmarks:
-w -qsuppress=1500-036 -qsuppress=cmpmsg -qipa=noobject -qipa=threads

Benchmarks using both Fortran and C:
-w -qsuppress=1500-036 -qsuppress=cmpmsg -qipa=noobject -qipa=threads

---

**Peak Optimization Flags**

C benchmarks:
104.milc: basepeak = yes
122.tachyon: basepeak = yes

C++ benchmarks:
126.lammps: basepeak = yes

Fortran benchmarks:
107.leslie3d: basepeak = yes
113.GemsFDTD: basepeak = yes
129.tera_tf: basepeak = yes
137.lu: basepeak = yes

Benchmarks using both Fortran and C:

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**Software Availability:** May-2008

### Peak Optimization Flags (Continued)

- 115.fds4: basepeak = yes
- 121.pop2: basepeak = yes
- 127.wrf2: basepeak = yes
- 128.GAPgeofem: basepeak = yes
- 130.socorro: basepeak = yes
- 132.zeusmp2: basepeak = yes

The flags files that were used to format this result can be browsed at:


You can also download the XML flags sources by saving the following links:


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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 v1.0.  
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