# SPEC® MPIM2007 Result

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## SGI

SGI Altix XE 1300
(Intel Xeon X5272, 3.4 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = NC

**MPI2007 license:** 4
**Test sponsor:** SGI
**Tested by:** SGI

**Test date:** Jun-2008
**Hardware Availability:** Feb-2008
**Software Availability:** Apr-2008

| | Ranks |
|---|---|
| 104.milc | |
| 107.leslie3d | |
| 113.GemsFDTD | |
| 115.fds4 | |
| 121.pop2 | |
| 122.tachyon | |
| 126.lammps | |
| 127.wrf2 | |
| 128.GAPgeofem | |
| 129.tera_tf | |
| 130.socorro | |
| 132.zeusmp2 | |
| 137.lu | |

Non-Compliant

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ranks | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Ranks | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 104.milc | 64 | NC | NC | NC | NC | | | | | | | | | |
| 107.leslie3d | 64 | NC | NC | NC | NC | | | | | | | | | |
| 113.GemsFDTD | 64 | NC | NC | NC | NC | | | | | | | | | |
| 115.fds4 | 64 | NC | NC | NC | NC | | | | | | | | | |
| 121.pop2 | 64 | NC | NC | NC | NC | | | | | | | | | |
| 122.tachyon | 64 | NC | NC | NC | NC | | | | | | | | | |
| 126.lammps | 64 | NC | NC | NC | NC | | | | | | | | | |
| 127.wrf2 | 64 | NC | NC | NC | NC | | | | | | | | | |
| 128.GAPgeofem | 64 | NC | NC | NC | NC | | | | | | | | | |

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 |
| 129.tera_tf | 64 | NC | NC | NC | NC | | | | | | | | | |
| 130.socorro | 64 | NC | NC | NC | NC | | | | | | | | | |
| 132.zeusmp2 | 64 | NC | NC | NC | NC | | | | | | | | | |
| 137.lu | 64 | NC | NC | NC | NC | | | | | | | | | |

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

### Hardware Summary

| | |
|---|---|
| Type of System: | Homogeneous |
| Compute Node: | SGI Altix XE 320 Compute Node |
| Interconnects: | InfiniBand (MPI)<br>InfiniBand (I/O) |
| File Server Node: | SGI InfiniteStorage NAS/SAN |
| Total Compute Nodes: | 16 |
| Total Chips: | 32 |
| Total Cores: | 64 |
| Total Threads: | 64 |
| Total Memory: | 256 GB |
| Base Ranks Run: | 64 |
| Minimum Peak Ranks: | -- |
| Maximum Peak Ranks: | -- |

### Software Summary

| | |
|---|---|
| Compiler: | Intel C Compiler for Linux<br>Version 10.1, Build 20080312 |
| C++ Compiler: | Intel C++ Compiler for Linux<br>Version 10.1, Build 20080312 |
| Fortran Compiler: | Intel Fortran Compiler for Linux<br>Version 10.1, Build 20080312 |
| Base Pointers: | 64-bit |
| Peak Pointers: | 64-bit |
| MPI Library: | Intel MPI 3.1.038 |
| Other MPI Info: | OFED 1.3 |
| Pre-processors: | None |
| Other Software: | None |

## Node Description: SGI Altix XE 320 Compute Node

### Hardware

| | |
|---|---|
| Number of nodes: | 16 |
| Uses of the node: | compute |
| Vendor: | SGI |
| Model: | SGI Altix XE 320 (Intel Xeon X5272, 3.4 GHz) |
| CPU Name: | Intel Xeon X5272 |
| CPU(s) orderable: | 1-2 chips |
| Chips enabled: | 2 |
| Cores enabled: | 4 |
| Cores per chip: | 2 |
| Threads per core: | 1 |
| CPU Characteristics: | Dual Core, 3.4 GHz |
| CPU MHz: | 3392 |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 6 MB I+D on chip per chip |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8*2GB PC2-6400 CL5-5-5 FB-DIMMs) |
| Disk Subsystem: | None |
| Other Hardware: | None |
| Adapter: | Mellanox MT25204 InfiniHost III Lx IB DDR (PCIe x8 Gen1 2.5 GT/s) |

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### Software

| | |
|---|---|
| Adapter: | Mellanox MT25204 InfiniHost III Lx IB DDR (PCIe x8 Gen1 2.5 GT/s) |
| Adapter Driver: | OFED-1.3 |
| Adapter Firmware: | 1.2.0 |
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1<br>Kernel 2.6.16.46-0.12-smp |
| Local File System: | NFSv3 |
| Shared File System: | NFSv3 IPoIB |
| System State: | Multi-user, run level 3 |
| Other Software: | SGI ProPack 5 for Linux Service Pack 5 |

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SPECmpiM_base2007 = NC

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**Test sponsor:** SGI
**Tested by:** SGI

**Test date:** Jun-2008
**Hardware Availability:** Feb-2008
**Software Availability:** Apr-2008

## Node Description: SGI Altix XE 320 Compute Node

| | |
|---|---|
| Number of Adapters: | 1 |
| Slot Type: | PCIe x8 Gen1 |
| Data Rate: | InfiniBand 4x DDR |
| Ports Used: | 1 |
| Interconnect Type: | InfiniBand |

## Node Description: SGI InfiniteStorage NAS/SAN

### Hardware

| | |
|---|---|
| Number of nodes: | 1 |
| Uses of the node: | fileserver |
| Vendor: | SGI |
| Model: | SGI Altix 450 Density System (Itanium 2 Processor 9030 1.6GHz/8M) |
| CPU Name: | Dual-Core Intel Itanium 2 9030 |
| CPU(s) orderable: | 1-38 chips |
| Chips enabled: | 2 |
| Cores enabled: | 4 |
| Cores per chip: | 2 |
| Threads per core: | 1 |
| CPU Characteristics: | 533 MHz FSB |
| CPU MHz: | 1594 |
| Primary Cache: | 16 KB I + 16 KB D on chip per core |
| Secondary Cache: | 1 MB I + 256 KB D on chip per core |
| L3 Cache: | 4 MB I+D on chip per core |
| Other Cache: | None |
| Memory: | 48 GB (24*2GB DDR2-400 DIMMS) |
| Disk Subsystem: | 9.3 TB RAID 5<br>64 x 146 GB FibreChannel (Seagate Cheetah 15000 rpm) |
| Other Hardware: | None |
| Adapter: | Mellanox MT25208 InfiniHost III Ex (PCIe x8 Gen1 2.5 GT/s) |
| Number of Adapters: | |
| Slot Type: | PCIe x8 Gen1 |
| Data Rate: | InfiniBand 4x DDR |
| Ports Used: | |
| Interconnect Type: | InfiniBand |

### Software

| | |
|---|---|
| Adapter: | Mellanox MT25208 InfiniHost III Ex (PCIe x8 Gen1 2.5 GT/s) |
| Adapter Driver: | OFED-1.3 |
| Adapter Firmware: | 5.3.0 |
| Operating System: | SUSE Linux Enterprise Server 10 (ia64) SP1<br>Kernel 2.6.16.54-0.2.5-default |
| Local File System: | xfs |
| Shared File System: | -- |
| System State: | Multi-user, run level 3 |
| Other Software: | SGI ProPack 5 for Linux Service Pack 5 |

## Interconnect Description: InfiniBand (MPI)

### Hardware

| | |
|---|---|
| Vendor: | Voltaire |
| Model: | MT25204 InfiniHost III Lx |
| Switch Model: | Voltaire ISR 9024D-M |

### Software

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SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = NC

**MPI2007 license:** 4
**Test sponsor:** SGI
**Tested by:** SGI

**Test date:** Jun-2008
**Hardware Availability:** Feb-2008
**Software Availability:** Apr-2008

## Interconnect Description: InfiniBand (MPI)

| | |
|---|---|
| Number of Switches: | 1 |
| Number of Ports: | 24 |
| Data Rate: | InfiniBand 4x DDR |
| Firmware: | 3.4.5 |
| Topology: | Single switch |
| Primary Use: | MPI traffic |

## Interconnect Description: InfiniBand (I/O)

| Hardware | | Software |
|---|---|---|
| Vendor: | Voltaire | |
| Model: | MT25204 InfiniHost III Lx | |
| Switch Model: | Voltaire ISR 9024D-M | |
| Number of Switches: | 1 | |
| Number of Ports: | 24 | |
| Data Rate: | InfiniBand 4x DDR | |
| Firmware: | 3.4.5 | |
| Topology: | Single switch | |
| Primary Use: | I/O traffic | |

## General Notes

```
Required alternate sources:
   129.tera_tf: fixbuffer
```

## Base Compiler Invocation

C benchmarks:
mpiicc

C++ benchmarks:

126.lammps: mpiicpc

Fortran benchmarks:
mpiifort

Benchmarks using both Fortran and C:
mpiicc mpiifort

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## SGI

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(Intel Xeon X5272, 3.4 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base200[illegible] = [illegible]NC

**MPI2007 license:** 4
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**Software Availability:** Apr-2008

## 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 -ipo -xT -no-prec-div

C++ benchmarks:

126.lammps: -O3 -ipo -xT -no-prec-div -a[illegible]-alias

Fortran benchmarks:
-O3 -ipo -xT -no-prec-div

Benchmarks using both Fortran and C:
-O3 -ipo -xT -no-prec-div

The flags file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.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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