



SPEC® MPIM2007 Result

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SGI

SGI Altix 4700 Bandwidth System (Itanium 2 Processor 9040 1.6GHz/18M)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = NC

MPI2007 license: 4

Test sponsor: SGI

Tested by: SGI

Test date: May-2007

Hardware Availability: Jul-2006

Software Availability: Apr-2007

| 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 |

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: SMP
 Compute Node: SMP
 File Server Node: SMP
 Total Compute Nodes: 1
 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 Itanium Compiler for Itanium-based Applications Version 9.1 (Build 20070320)
 C++ compiler: Intel C++ Itanium Compiler for Itanium-based Applications Version 9.1 (Build 20070320)
 Fortran Compiler: Intel Fortran Itanium Compiler for Itanium-based Applications Version 9.1 (Build 20070320)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: SGI Message Passing Toolkit (MPT) Version 1.15
 Other MPI Info: None
 Pre-processors: None
 Other Software: None

Node Description: SMP

Hardware

Number of nodes: 1
 Uses of the node: compute file server
 Vendor: SGI
 Model: SGI Altix 4700 Bandwidth System (Itanium 2 Processor 9040 1.6GHz/18M)
 CPU Name: Dual-core Intel Itanium 2 9040
 CPU(s) orderable: 1-512 chips
 Chips enabled: 32
 Cores enabled: 64
 Cores per chip: 2
 Threads per core: 1
 CPU FSB: 1333MHz FSB
 CPU MHz: 1600
 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: 9 MB I+D on chip per core
 Other Cache: None
 Memory: 256 GB (8*1GB DDR2-400 DIMMS per 2 core module)
 Disk Subsystem: 36 x 73 GB FibreChannel (Seagate Cheetah 15k rpm)
 Other Hardware: None
 Adapter: None
 Number of Adapters: 0

Software

Adapter: None
 Adapter Driver: Not applicable
 Adapter Firmware: Not applicable
 Operating System: SUSE Linux Enterprise Server 10 + SGI ProPack 5 Service Pack 1
 Local File System: 36 x 73 GB FibreChannel (Seagate Cheetah 15k rpm)
 Shared File System: None
 System State: Multi-user
 Other Software: None

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Node Description: SMP

Slot Type: Not applicable

Data Rate: Not applicable

Ports Used: 0

Interconnect Type: None

General Notes

```

setenv MPI_DSM_DISTRIBUTE 1
  Ensures that each MPI process gets a unique CPU and physical
  memory on the node with which that CPU is associated. The
  CPUs are chosen by simply starting at cpu 0 relative CPU 0
  and incrementing until all MPI processes have been forked.

setenv MPI_REQUEST_MAX 65536
  Determines the maximum number of nonblocking sends and
  receives that can simultaneously exist for any single MPI
  process. MPI generates an error message if this limit
  (or the default, if not set) is exceeded. Default: 16384

limit stacksize unlimited
  Removes limits on the maximum size of the automatically-
  extended stack region of the current process and each
  process it creates.

```

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

127.lammps.icpc

Fortran benchmarks:

ifort

Fortran benchmarks with Fortran and C:

icc ifort

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG

127.wrf2: -DSPEC_MPI_LINUX -DSPEC_MPI_CASE_FLAG



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Base Optimization Flags

C benchmarks:

-O3 -ipo -IPF-fp-relaxed -lmpi

C++ benchmarks:

126.lammps: -O3 -ipo -IPF-fp-relaxed -ansi-alias -lmpi

Fortran benchmarks:

-O3 -ipo -IPF-fp-relaxed -lmpi

Benchmarks using both Fortran and C:

-O3 -ipo -IPF-fp-relaxed -lmpi

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

<http://www.spec.org/mpi2007/flags/intel-c91-ipf.html>

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

<http://www.spec.org/mpi2007/flags/Intel-c91-ipf.xml>

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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 v59.
Report generated on Tue Jul 22 13:32:41 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 16 July 2007.