# SPEC® MPIM2007 Result

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## Intel Corporation
## Endeavor

SPECmpiM_peak2007 =   Not Run

SPECmpiM_base2007 =        NC

| | | | |
|---|---|---|---|
| **MPI2007 license:** 13 | | **Test date:** | Jan-2008 |
| **Test sponsor:** | Intel Corporation | **Hardware Availability:** | Dec-2007 |
| **Tested by:** | Grigory Zagorodnev | **Software Availability:** | Dec-2007 |

**SPEC has determined that this result was not in compliance with the SPEC MPI2007 run and reporting rules. Specifically, the result did not meet the requirement for baseline optimization flags to not use assertion flags (the flag -fno-alias is a violation of this rule). The result was found to be performance neutral compared to runs without -fno-alias. Replacement be found at http://www.spec.org/mpi2007/results/res2008q4/mpi2007-20080922-0**

Non-Compliant

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 | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 107.leslie3d | 256 | NC | NC | 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 Ranks | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Peak Ranks | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 113.GemsFDTD | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 115.fds4 | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 121.pop2 | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 122.tachyon | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 126.lammps | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 127.wrf2 | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 128.GAPgeofem | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 129.tera_tf | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 130.socorro | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 132.zeusmp2 | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |
| 137.lu | 256 | NC | NC | NC | NC | NC | NC | | | | | | | |

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: Endeavor Node
Interconnects: IB Switch
Gigabit Ethernet
File Server Node: Panasas Fileserver
Total Compute Nodes: 32
Total Chips: 64
Total Cores: 256
Total Threads: 256
Total Memory: 512 GB
Base Ranks Run: 256
Minimum Peak Ranks: --
Maximum Peak Ranks: --

## Software Summary

C Compiler: Intel C++ Compiler 10.1 for Linux (10.1.004)
C++ Compiler: Intel C++ Compiler 10.1 for Linux (10.1.004)
Fortran Compiler: Intel Fortran Compiler 10.1 for Linux (10.1.004)
Base Pointers: 64-bit
Peak Pointers: 64-bit
MPI Library: Intel MPI Library 3.1 for Linux (3.1.020)
Other MPI Info: None
Pre-processors: No
Other Software: None

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## Node Description: Endeavor Node

| Hardware | | Software | |
|---|---|---|---|
| Number of nodes: | 32 | Adapter: | Intel (ESB2) 82563EB Dual-Port Gigabit Ethernet Controller |
| Uses of the node: | compute | Adapter Driver: | e1000 |
| Vendor: | Intel | Adapter Firmware: | N/A |
| Model: | SR1560SF | Adapter: | Mellanox MHGH28-XTC IB DDR (PCIe x8 Gen1 2.5 GT/s) |
| CPU Name: | Intel Xeon CPU E5462 | Adapter Driver: | OFED 1.2.5 |
| CPU(s) orderable: | 1-2 chips | Adapter Firmware: | 2.2 |
| Chips enabled: | 2 | Operating System: | RedHat EL 4 Update 4 |
| Cores enabled: | 8 | Local File System: | Linux/ext3 |
| Cores per chip: | 4 | Shared File System: | DirectFlow |
| Threads per core: | 1 | System State: | Multi-User |
| CPU Characteristics: | 1600MHz FSB | Other Software: | PBS Pro 8.0 |
| CPU MHz: | 2800 | | |
| Primary Cache: | 32 KB I + 32 KB D on chip per core | | |
| Secondary Cache: | 12 MB I+D on chip per chip, 6 MB shared / 2 cores | | |
| L3 Cache: | None | | |
| Other Cache: | None | | |
| Memory: | 16 GB (FBDIMM 16x1-GB 667 MHz) | | |
| Disk Subsystem: | Seagate Barracuda ES 250 GB ST3250620NS | | |
| Other Hardware: | None | | |
| Adapter: | Intel (ESB2) 82563EB Dual-Port Gigabit Ethernet Controller | | |
| Number of Adapters: | 1 | | |
| Slot Type: | PCI-Express x8 | | |
| Data Rate: | 1Gbps Ethernet | | |
| Ports Used: | 1 | | |
| Interconnect Type: | Ethernet | | |
| Adapter: | Mellanox MHGH28-XTC IB DDR (PCIe x8 Gen1 2.5 GT/s) | | |
| Number of Adapters: | 1 | | |
| Slot Type: | PCIe x16 Gen2 | | |
| Data Rate: | InfiniBand 4x DDR | | |
| Ports Used: | 1 | | |
| Interconnect Type: | InfiniBand | | |

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## Node Description: Panasas Fileserver

| Hardware | | Software | |
|---|---|---|---|
| Number of nodes: | 1 | Adapter: | -- |
| Uses of the node: | fileserver | Adapter Driver: | -- |
| Vendor: | Panasas | Adapter Firmware: | N/A |
| Model: | ActiveStor 3050 | Operating System: | 2.3.7.a-195733.1 |
| CPU Name: | -- | Local File System: | PanFS |
| CPU(s) orderable: | 1-2 chips | Shared File System: | DirectFlow |
| Chips enabled: | 1 | System State: | Multi-User |
| Cores enabled: | 1 | Other Software: | None |
| Cores per chip: | 1 | | |
| Threads per core: | 1 | | |
| CPU Characteristics: | -- | | |
| CPU MHz: | 0 | | |
| Primary Cache: | None | | |
| Secondary Cache: | None | | |
| L3 Cache: | None | | |
| Other Cache: | None | | |
| Memory: | 1 MB | | |
| Disk Subsystem: | 140 disks, 50GB/disk, 5TB total, 7 Shelves | | |
| Other Hardware: | None | | |
| Adapter: | -- | | |
| Number of Adapters: | 1 | | |
| Slot Type: | -- | | |
| Data Rate: | 1Gbps Ethernet | | |
| Ports Used: | 1 | | |
| Interconnect Type: | Ethernet | | |

## Interconnect Description: IB Switch

| Hardware | | Software | |
|---|---|---|---|
| Vendor: | SilverStorm Technologies | | |
| Model: | Cisco SFS 7024D | | |
| Switch Model: | Cisco SFS 7024D | | |
| Number of Switches: | 1 | | |
| Number of Ports: | 288 | | |

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### Interconnect Description: IB Switch

| | |
|---|---|
| Data Rate: | InfiniBand 4x DDR |
| Firmware: | 4.1.1.1.2 |
| Topology: | Star |
| Primary Use: | MPI traffic |

### Interconnect Description: Gigabit Ethernet

| **Hardware** | | **Software** |
|---|---|---|
| Vendor: | Cisco | |
| Model: | Cisco Catalyst 4510 | |
| Switch Model: | Cisco Catalyst 4510 | |
| Number of Switches: | 1 | |
| Number of Ports: | 332 | |
| Data Rate: | 1Gbps Ethernet | |
| Firmware: | N/A | |
| Topology: | Star | |
| Primary Use: | Cluster File System | |

## Base Compiler Invocation

C benchmarks:

C++ benchmarks:

    126.lammps: mpiicpc

Fortran benchmarks:
    mpiifort

Benchmarks using both Fortran and C:
    mpiicc mpiifort

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## Base Portability Flags

```
   121.pop2: -DSPEC_MPI_CASE_FLAG
126.lammps: -DMPICH_IGNORE_CXX_SEEK
  127.wrf2: -DSPEC_MPI_CASE_FLAG -DSPEC_MPI_LINUX
130.socorro: -DSPEC_EIGHT_BYTE_LONG
```

## Base Optimization Flags

C benchmarks:
```
     -O3 -no-prec-div -fno-alias -xT
```

C++ benchmarks:
```
     126.lammps: -O3 -no-prec-div -fno-alias -xT
```

Fortran benchmarks:
```
     -O3 -no-prec-div -fno-alias -xT
```

Benchmarks using both Fortran and C:
```
     -O3 -no-prec-div -fno-alias -xT
```

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

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