# SPEC® MPIM2007 Result

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## Intel Corporation
## Endeavor

SPECmpiM_peak2007 = Not Run

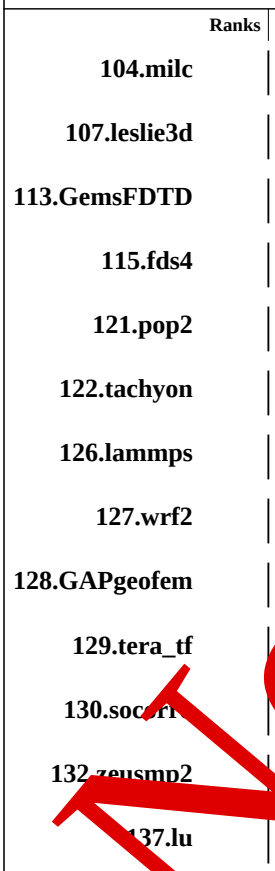
SPECmpiM_base2007 = NC

**MPI2007 license:** 13
**Test sponsor:** Intel Corporation
**Tested by:** Grigory Zagorodnev

**Test date:** Jan-2008
**Hardware Availability:** Dec-2007
**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-**

Non-Compliant




## 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 | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ranks | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | 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 |
| Interconnect: | IB Switch<br>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

| | |
|---|---|
| Number of nodes: | 32 |
| Uses of the node: | compute |
| Vendor: | Intel |
| Model: | SR1560SF |
| CPU Name: | Intel Xeon CPU E5462 |
| CPU(s) orderable: | 1-2 chips |
| Chips enabled: | 2 |
| Cores enabled: | 8 |
| Cores per chip: | 4 |
| Threads per core: | 1 |
| CPU Characteristics: | 1600MHz FSB |
| 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 (8 DIMM, 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: | 1 Gbps 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 |

### Software

| | |
|---|---|
| Adapter: | Intel (ESB2) 82563EB Dual-Port Gigabit Ethernet Controller |
| Adapter Driver: | e1000 |
| Adapter Firmware: | N/A |
| Adapter: | Mellanox MHGH28-XTC IB DDR (PCIe x8 Gen1 2.5 GT/s) |
| Adapter Driver: | OFED 1.2.5 |
| Adapter Firmware: | 2.2 |
| Operating System: | RedHat EL 4 Update 4 |
| Local File System: | Linux/ext3 |
| Shared File System: | DirectFlow |
| System State: | Multi-User |
| Other Software: | PBS Pro 8.0 |

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## Node Description: Panasas File Server

### Hardware

| | |
|---|---|
| Number of nodes: | 1 |
| Uses of the node: | fileserver |
| Vendor: | Panasas |
| Model: | ActiveStor 3050 |
| CPU Name: | -- |
| CPU(s) orderable: | 1-2 chips |
| Chips enabled: | 1 |
| Cores enabled: | 1 |
| 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, 750GB/disk, 105TB total, 7 Shelves |
| Other Hardware: | None |
| Adapter: | |
| Number of Adapters: | 1 |
| Slot Type: | -- |
| Data Rate: | 1Gbps Ethernet |
| Ports Used: | 4 |
| Interconnect Type: | Ethernet |

### Software

| | |
|---|---|
| Adapter: | -- |
| Adapter Driver: | -- |
| Adapter Firmware: | N/A |
| Operating System: | 2.3.7.a-195733.1 |
| Local File System: | PanFS |
| Shared File System: | DirectFlow |
| System State: | Multi-User |
| Other Software: | None |

## Interconnect Description: IB Switch

### Hardware

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

### Software

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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_[illegible]T_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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