



SPEC[®] MPIM2007 Result

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Linux Networx

SPECmpiM_peak2007 = Not Run

Linux Networx LS-1

SPECmpiM_base2007 = NA

MPI2007 license: 021

Test sponsor: Scali, Inc

Tested by: Scali, Inc

Test date: Sep-2007

Hardware Availability: Apr-2007

Software Availability: Aug-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	32	NA	NA	NA	NA	NA	NA							
107.leslie3d	32	NA	NA	NA	NA	NA	NA							
113.GemsFDTD	32	NA	NA	NA	NA	NA	NA							
115.fds4	32	NA	NA	NA	NA	NA	NA							
121.pop2	32	NA	NA	NA	NA	NA	NA							
122.tachyon	32	NA	NA	NA	NA	NA	NA							
126.lammps	32	NA	NA	NA	NA	NA	NA							
127.wrf2	32	NA	NA	NA	NA	NA	NA							
128.GAPgeofem	32	NA	NA	NA	NA	NA	NA							

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	32	NA	NA	NA	NA	NA	NA									
130.socorro	32	NA	NA	NA	NA	NA	NA									
132.zeusmp2	32	NA	NA	NA	NA	NA	NA									
137.lu	32	NA	NA	NA	NA	NA	NA									

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

Hardware Summary

Type of System: Homogenous
 Compute Node: Linux Networkx LS-1
 Interconnect: InfiniBand
 File Server Node: Linux Networkx Evolocivity 1
 Total Compute Nodes: 8
 Total Chips: 16
 Total Cores: 32
 Total Threads: 32
 Total Memory: 64 GB
 Base Ranks Run: 32
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: QLogic PathScale C Compiler 3.0
 C++ Compiler: QLogic PathScale C++ Compiler 3.0
 Fortran Compiler: QLogic PathScale Fortran Compiler 3.0
 Base Pointers: 64-bit
 User Pointers: Not Applicable
 MPI Library: Scali MPI Connect 5.5
 Other MPI Info: IB Gold VAPI
 Pre-processors: None
 Other Software: None

Node Description: Linux Networkx LS-1

Hardware

Number of nodes: 8
 Uses of the node: compute
 Vendor: Linux Networkx, LS-1
 Model: LS-1
 CPU Name: Intel Xeon 5100
 CPU(s) order file: 12 chips
 Chips enabled: 2
 Cores enabled: 4
 Cores per chip: 2
 Threads per core: 2
 CPU FSB: 1333 Mhz FSB
 CPU MHz: 3000
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 8 GB (8 x 1GB DIMMs)
 Disk Subsystem: 250GB SAS hard drive
 Other Hardware: None
 Adapter: Mellanox MHGA28-XTC
 Number of Adapters: 1

Software

Adapter: Mellanox MHGA28-XTC
 Adapter Driver: IBGD 1.8.2
 Adapter Firmware: 5.1.4
 Operating System: SLES9 SP3
 Local File System: Not applicable
 Shared File System: GPFS
 System State: multi-user
 Other Software: None

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Node Description: Linux Networkx LS-1

Slot Type: PCIe x8
 Data Rate: InfiniBand 4x DDR
 Ports Used: 1
 Interconnect Type: InfiniBand

Node Description: Linux Networkx Evolocivity 1

Hardware

Number of nodes: 8
 Uses of the node: file server
 Vendor: Linux Networkx, Inc.
 Model: Evolocivity 1
 CPU Name: AMD Opteron 248
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 2
 Cores per chip: 1
 Threads per core: 1
 CPU Characteristics: --
 CPU MHz: 2200
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: None
 Other Cache: None
 Memory: 8 GB (8 x 1 GB DIMMs)
 Disk Subsystem: 18 TB SAS, interconnected by FC2
 Other Hardware: --
 Adapter: Mellanox MXXL-CF128-T
 Number of Adapters: 1
 Slot Type: PCI-X
 Data Rate: InfiniBand 4x DDR
 Ports Used: 1
 Interconnect Type: InfiniBand

Software

Adapter: Mellanox MXXL-CF128-T
 Adapter Driver: IBGD 1.8.2
 Adapter Firmware: 3.5.0
 Operating System: SLES9 SP3
 Local File System: Not applicable
 Remote File System: GPFS
 System State: multi-user
 Other Software: --

Interconnect Description: InfiniBand

Hardware

Vendor: QLogic
 Model: QLogic Silverstorm 9120 Fabric Director
 Switch Model: 9120
 Number of Switches: 1
 Number of Ports: 144
 Data Rate: InfiniBand 4x SDR and InfiniBand 4x DDR
 Firmware: 4.0.0.5.5

Software

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Interconnect Description: InfiniBand

Topology: Single switch (star)
Primary Use: MPI and filesystem traffic

Submit Notes

Scali MPI Connect's mpirun wrapper has been used to submit the jobs. Description of switches:

- aff manual:0x1:0x2:0x4:0x8: instruct the launcher to bind rank N..N+3 to the cores corresponding to the masks 1,2,4, and 8 respectively on each node.
- npr 4: launch 4 processes per node.
- rsh rsh: use rsh as method to connect to nodes.
- mstdin none: do not connect the process to STDIN to anything.
- q: quiet mode, no output from launcher.
- machinefile: file selecting the hosts to run on.
- net smp,ib: prioritized list of links used for communication between processes

General Notes

Scali, Inc has executed the benchmark on Linux Networx's Solution Center. We are grateful for the support from Linux Networx and in particular Justin Wood in order to finalize the submission.

Base Compiler Invocation

C benchmarks:
/opt/scali/bin/mpicc -ccl pathcc

C++ benchmarks:
/opt/scali/bin/mpicc -ccl pathCC

Fortran benchmarks:
/opt/scali/bin/mpif77 -ccl pathf90

Benchmarks using both Fortran and C:
/opt/scali/bin/mpicc -ccl pathcc /opt/scali/bin/mpif77 -ccl pathf90



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Base Portability Flags

104.milc: -DSPEC_MPI_LP64
 115.fds4: -DSPEC_MPI_LC_TRAILING_DOUBLE_UNDERSCORE -DSPEC_MPI_LP64
 121.pop2: -DSPEC_MPI_DOUBLE_UNDERSCORE -DSPEC_MPI_LP64
 122.tachyon: -DSPEC_MPI_LP64
 127.wrf2: -DF2CSTYLE -DSPEC_MPI_DOUBLE_UNDERSCORE -DSPEC_MPI_LINUX
 -DSPEC_MPI_LP64
 128.GAPgeofem: -DSPEC_MPI_LP64
 130.socorro: -fno-second-underscore -DSPEC_MPI_LP64
 132.zeusmp2: -DSPEC_MPI_LP64

Base Optimization Flags

C benchmarks:
 -march=core -Ofast -OPT:malloc_alg=1

C++ benchmarks:
 126.lammps: -march=core -O3 -OPT:Ofast -OPT:local_fwd_sched=on

Fortran benchmarks:
 -march=core -O3 -OPT:Ofast -OPT:malloc_alg=1 -LANG:copyinout=off

Benchmarks using both Fortran and C:
 -march=core -Ofast -OPT:malloc_alg=1 -O3 -OPT:Ofast
 -LANG:copyinout=off

Base Other Flags

C benchmarks:
 -IPA:max_jobs=4

C++ benchmarks:
 126.lammps: -IPA:max_jobs=4

Fortran benchmarks:
 -IPA:max_jobs=4

Benchmarks using both Fortran and C:
 -IPA:max_jobs=4

The flags file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/MPI2007_flags.20071107.00.html



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

http://www.spec.org/mpi2007/flags/MPI2007_flags.20071107.00.xml

Not Available

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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.
Report generated on Tue Jul 22 13:33:09 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 7 November 2007.