SPEC® MPIM2007 Result

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Huawei

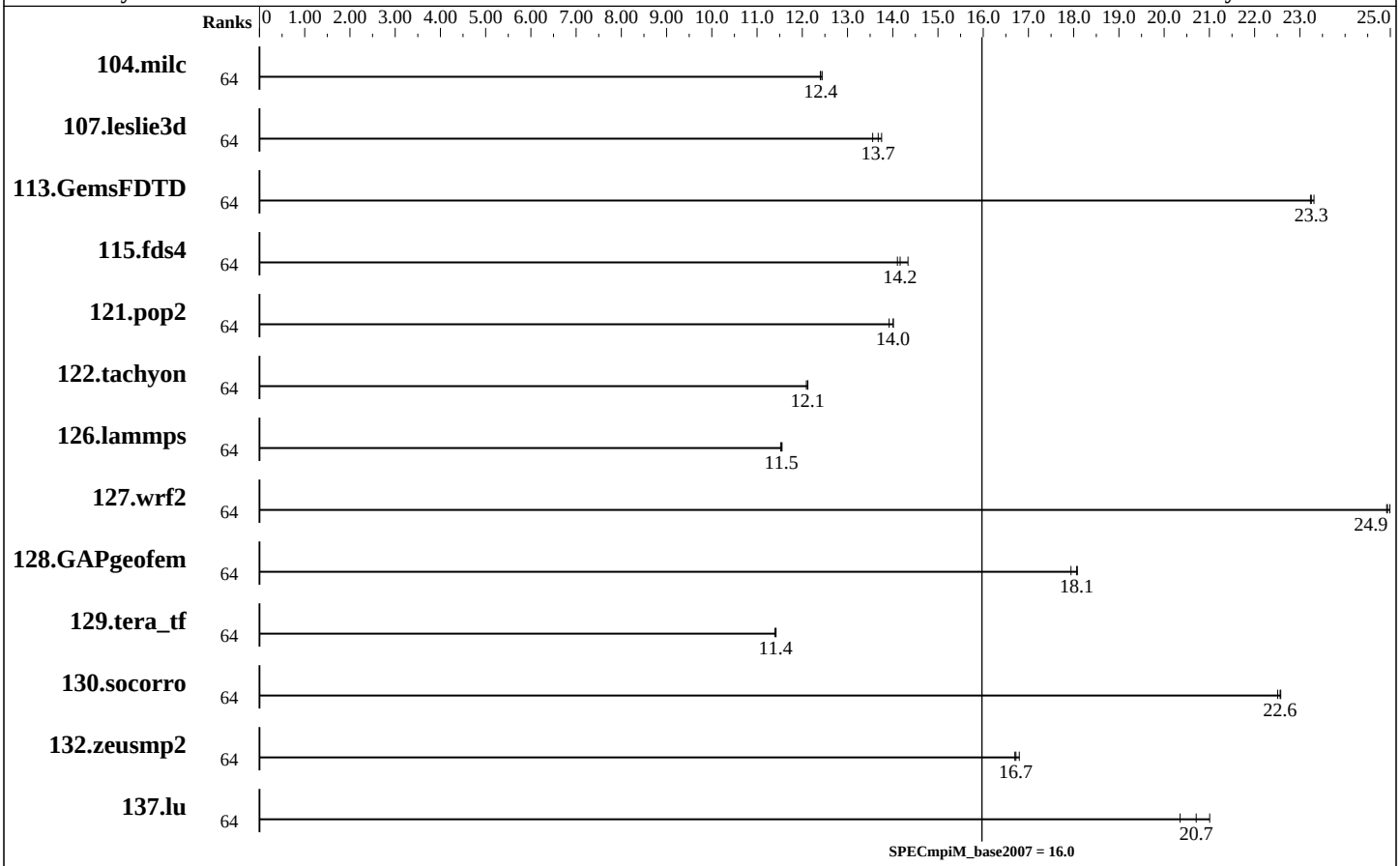
Tecal RH2288 V2 (Intel Xeon E5-2680, 2.70 GHz, DDR3-1333 MHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 16.0

MPI2007 license: 24
Test sponsor: Huawei
Tested by: Huawei

Test date: Apr-2013
Hardware Availability: Mar-2012
Software Availability: Oct-2012



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	64	126	12.4	**126**	**12.4**	126	12.4							
107.leslie3d	64	**382**	**13.7**	385	13.6	380	13.8							
113.GemsFDTD	64	271	23.2	**271**	**23.3**	271	23.3							
115.fds4	64	138	14.1	**138**	**14.2**	136	14.3							
121.pop2	64	297	13.9	295	14.0	**295**	**14.0**							
122.tachyon	64	231	12.1	231	12.1	**231**	**12.1**							
126.lammps	64	253	11.5	**253**	**11.5**	252	11.6							
127.wrf2	64	313	24.9	**313**	**24.9**	312	25.0							
128.GAPgeofem	64	**114**	**18.1**	115	17.9	114	18.1							
129.tera_tf	64	**242**	**11.4**	243	11.4	242	11.4							

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
130.socorro	64	**169**	**22.6**	170	22.5	169	22.6							
132.zeusmp2	64	185	16.8	**186**	**16.7**	186	16.7							
137.lu	64	**178**	**20.7**	181	20.4	175	21.0							

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:	RH2288 V2
Interconnects:	IB Switch Gigabit Ethernet
File Server Node:	Tecal RH2285
Total Compute Nodes:	4
Total Chips:	8
Total Cores:	64
Total Threads:	64
Total Memory:	256 GB
Base Ranks Run:	64
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C++ Composer XE for Linux, Version 13.0.1.117 Build 20121010
C++ Compiler:	Intel C++ Composer XE for Linux, Version 13.0.1.117 Build 20121010
Fortran Compiler:	Intel Fortran Composer XE for Linux, Version 13.0.1.117 Build 20121010
Base Pointers:	64-bit
Peak Pointers:	64-bit
MPI Library:	Intel MPI Library 4.1 Build 20120831 for Linux
Other MPI Info:	None
Pre-processors:	No
Other Software:	None

Node Description: RH2288 V2

Hardware

Number of nodes:	4
Uses of the node:	compute
Vendor:	Huawei
Model:	Tecal RH2288 V2 rack server
CPU Name:	Intel Xeon E5-2680
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	16
Cores per chip:	8
Threads per core:	1
CPU Characteristics:	Intel Turbo Boost Technology up to 3.5 GHz, 8.0 GT/s QPI, Hyper-Threading disabled
CPU MHz:	2700
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	20 MB I+D on chip per chip, 20 MB shared / 8 cores
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	Seagate ST9146803SS, 146 GB SAS 10K RPM
Other Hardware:	None
Adapter:	Onboard Intel 82580 Ethernet Controller

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Software

Adapter:	Onboard Intel 82580 Ethernet Controller
Adapter Driver:	3.0.6-k
Adapter Firmware:	3.2-9
Adapter:	MCX353A-QCBT
Adapter Driver:	MLNX_OFED_LINUX-1.5.3-3.1.0-rhel6.2-x86_64
Adapter Firmware:	2.11.500
Operating System:	Red Hat EL 6.2, kernel 2.6.32-220.el6.x86_64
Local File System:	Linux/ext4
Shared File System:	NFS
System State:	Multi-User
Other Software:	None

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MPI2007 license: 24
Test sponsor: Huawei
Tested by: Huawei

Test date: Apr-2013
Hardware Availability: Mar-2012
Software Availability: Oct-2012

Node Description: RH2288 V2

Number of Adapters:	1
Slot Type:	PCI-Express x8
Data Rate:	1Gbps Ethernet
Ports Used:	1
Interconnect Type:	Ethernet
Adapter:	MCX353A-QCBT
Number of Adapters:	1
Slot Type:	PCIe x8 Gen2
Data Rate:	InfiniBand 4x QDR
Ports Used:	1
Interconnect Type:	InfiniBand

Node Description: Tecal RH2285

Hardware

Number of nodes:	1
Uses of the node:	fileserver
Vendor:	Huawei
Model:	Tecal RH2285
CPU Name:	Intel Xeon X5670 CPU
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	12
Cores per chip:	6
Threads per core:	1
CPU Characteristics:	N/A
CPU MHz:	2930
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB
Disk Subsystem:	1 x 500 GB SATA 7200 RPM
Other Hardware:	None
Adapter:	Dual port Broadcom BCM 5709 Ethernet Controller
Number of Adapters:	1
Slot Type:	Integrated
Data Rate:	1Gbps Ethernet
Ports Used:	1
Interconnect Type:	Ethernet

Software

Adapter:	Dual port Broadcom BCM 5709 Ethernet Controller
Adapter Driver:	2.2.3
Adapter Firmware:	4.6.4
Operating System:	Red Hat EL 6.2, kernel 2.6.32-220.el6.x86_64
Local File System:	None
Shared File System:	NFS
System State:	Multi-User
Other Software:	None

Interconnect Description: IB Switch

Hardware		Software
Vendor:	Mellanox	
Model:	Mellanox IS5025	
Switch Model:	1U IB Switch	
Number of Switches:	1	
Number of Ports:	36	
Data Rate:	InfiniBand 4x QDR	
Firmware:	7.4.0000	
Topology:	Fat tree	
Primary Use:	MPI traffic	

Interconnect Description: Gigabit Ethernet

Hardware		Software
Vendor:	Huawei	
Model:	Quidway S5328	
Switch Model:	Quidway S5328	
Number of Switches:	1	
Number of Ports:	28	
Data Rate:	1Gbps Ethernet	
Firmware:	5.1.2	
Topology:	Fat tree	
Primary Use:	Cluster File System	

Submit Notes

```
The config file option 'submit' was used.
mpiexec.hydra -f /mpi/nodes -genv I_MPI_DEVICE rdssm
-genv I_MPI_FALLBACK_DEVICE disable -n $ranks $command
```

General Notes

```
130.socorro (base): "nullify_ptrs" src.alt was used.

 MPI startup command:
   mpiexec.hydra command was used to start MPI jobs.

 BIOS settings:
   Intel Hyper-Threading Technology (SMT): Disabled (default is Enabled)
   Intel Turbo Boost Technology (Turbo)  : Enabled (default is Enabled)

 RAM configuration:
   Compute nodes have 1x8-GB RDIMM on each memory channel.

 Network:
   One 20-port switch
```

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General Notes (Continued)

```
Compute Node Environment:
  ulimit -s = unlimited
  ulimit -l = unlimited
  File "/etc/modprobe.d/mlx4_core.conf" modified to contain "options
  mlx4_core log_mtts_per_seg=5"
```

Base Compiler Invocation

C benchmarks:
`mpiicc`

C++ benchmarks:

126.lammps: `mpiicpc`

Fortran benchmarks:
`mpiifort`

Benchmarks using both Fortran and C:
`mpiicc mpiifort`

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: `-assume nostd_intent_in`

Base Optimization Flags

C benchmarks:
`-O3 -xAVX -no-prec-div`

C++ benchmarks:

126.lammps: `-O3 -xAVX -no-prec-div`

Fortran benchmarks:
`-O3 -xAVX -no-prec-div`

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`-O3 -xAVX -no-prec-div`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/mpi2007/flags/EM64T_Huawei_flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/mpi2007/flags/EM64T_Huawei_flags.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 v2.0.1.
Report generated on Tue Jul 22 13:46:28 2014 by SPEC MPI2007 PS/PDF formatter v1463.
Originally published on 15 May 2013.