



# SPEC® MPIM2007 Result

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## Huawei

Tecal RH2288 V2 (Intel Xeon E5-2690, 2.90 GHz, DDR3-1600 MHz)

SPECmpiM\_peak2007 = Not Run

SPECmpiM\_base2007 = 4.61

MPI2007 license: 24

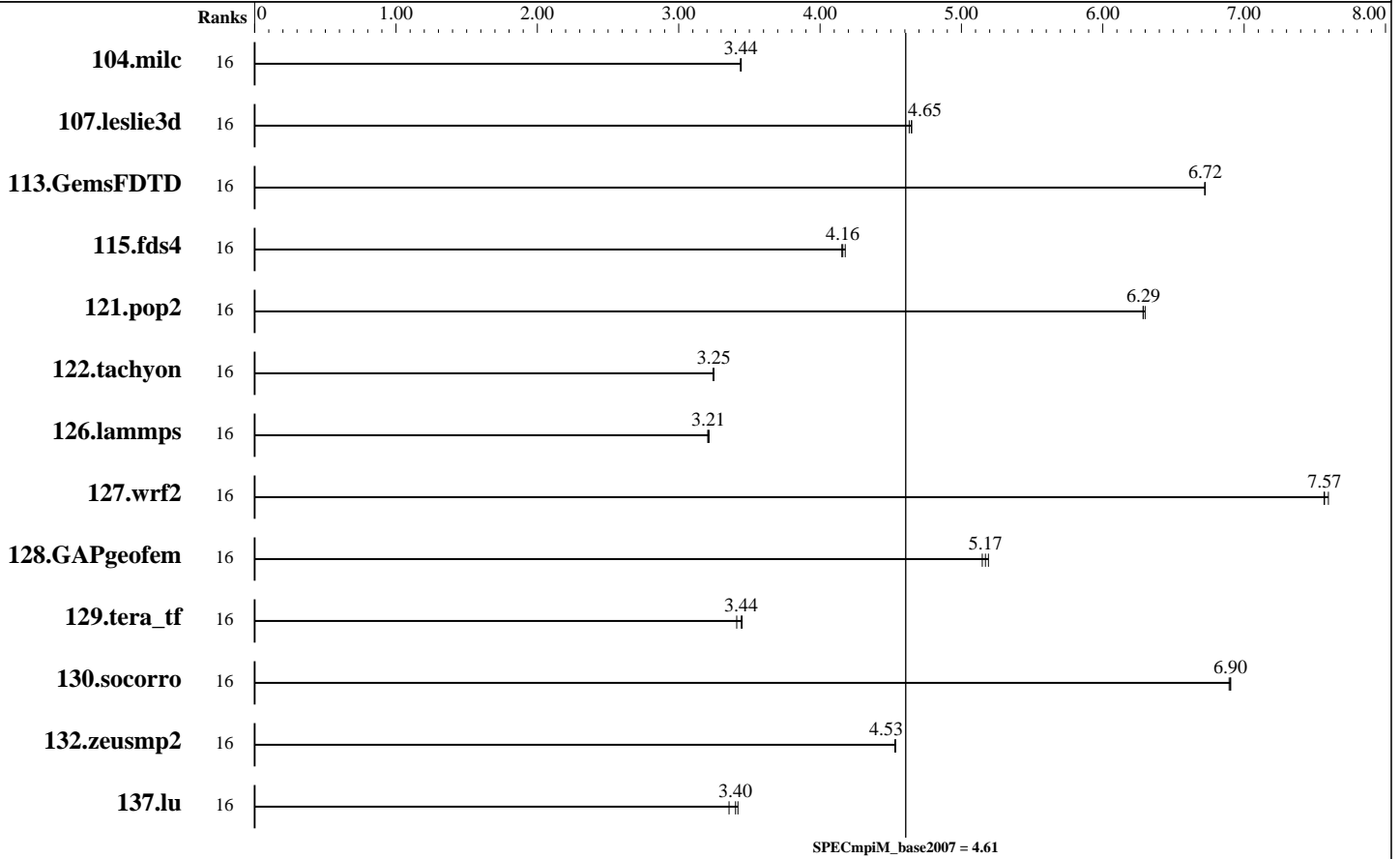
Test sponsor: Huawei

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	16	455	3.44	<b>455</b>	<b>3.44</b>	455	3.44									
107.leslie3d	16	<b>1123</b>	<b>4.65</b>	1123	4.65	1127	4.63									
113.GemsFDTD	16	939	6.72	<b>938</b>	<b>6.72</b>	938	6.72									
115.fds4	16	467	4.18	470	4.15	<b>469</b>	<b>4.16</b>									
121.pop2	16	<b>657</b>	<b>6.29</b>	655	6.30	657	6.28									
122.tachyon	16	<b>861</b>	<b>3.25</b>	861	3.25	863	3.24									
126.lammps	16	909	3.21	907	3.21	<b>908</b>	<b>3.21</b>									
127.wrf2	16	1026	7.60	<b>1030</b>	<b>7.57</b>	1030	7.57									
128.GAPgeofem	16	<b>399</b>	<b>5.17</b>	401	5.15	398	5.19									
129.tera_tf	16	812	3.41	<b>804</b>	<b>3.44</b>	803	3.45									

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	16	554	6.89	553	6.90	<b>553</b>	<b>6.90</b>							
132.zeusmp2	16	685	4.53	684	4.53	<b>685</b>	<b>4.53</b>							
137.lu	16	<b>1081</b>	<b>3.40</b>	1095	3.36	1075	3.42							

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: 1  
 Total Chips: 2  
 Total Cores: 16  
 Total Threads: 16  
 Total Memory: 64 GB  
 Base Ranks Run: 16  
 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: 1  
 Uses of the node: compute  
 Vendor: Huawei  
 Model: Tecal RH2288 V2 rack server  
 CPU Name: Intel Xeon E5-2690  
 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 3.8 GHz, 8.0 GT/s QPI, Hyper-Threading disabled  
 CPU MHz: 2900  
 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

#### 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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### 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



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### 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](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](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](mailto:webmaster@spec.org).

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