Hewlett-Packard Company

SPECfp®2006 = Not Run
SPECfp_base2006 = 72.8

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

CPU Name: Intel Xeon E5-2670
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2600
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
CPU(s) orderable: 1,2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Hardware

Operating System: Red Hat Enterprise Linux Server release 6.1,
Kernel 2.6.32-131.0.15.el6.x86_64
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)

Software

Continued on next page
Hewlett-Packard Company

ProLiant SL230s Gen8
(2.60 GHz, Intel Xeon E5-2670)

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (16 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 750 GB 7.2 K SATA
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>48.6</td>
<td>279</td>
<td>46.8</td>
<td>290</td>
<td>47.0</td>
<td>289</td>
<td></td>
<td></td>
</tr>
<tr>
<td>416.gamess</td>
<td>654</td>
<td>29.9</td>
<td>656</td>
<td>29.9</td>
<td>657</td>
<td>29.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>433.milc</td>
<td>176</td>
<td>52.1</td>
<td>175</td>
<td>52.4</td>
<td>175</td>
<td>52.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>434.zeuomp</td>
<td>76.4</td>
<td>119</td>
<td>76.2</td>
<td>119</td>
<td>76.2</td>
<td>119</td>
<td></td>
<td></td>
</tr>
<tr>
<td>435.gromacs</td>
<td>207</td>
<td>34.6</td>
<td>206</td>
<td>34.6</td>
<td>207</td>
<td>34.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>36.3</td>
<td>329</td>
<td>36.3</td>
<td>329</td>
<td>35.9</td>
<td>333</td>
<td></td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>54.8</td>
<td>171</td>
<td>54.2</td>
<td>173</td>
<td>56.4</td>
<td>167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>444.namd</td>
<td>357</td>
<td>22.4</td>
<td>358</td>
<td>22.4</td>
<td>357</td>
<td>22.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>236</td>
<td>48.4</td>
<td>237</td>
<td>48.3</td>
<td>236</td>
<td>48.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>450.soplex</td>
<td>208</td>
<td>40.0</td>
<td>213</td>
<td>39.1</td>
<td>213</td>
<td>39.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>453.povray</td>
<td>127</td>
<td>41.9</td>
<td>127</td>
<td>41.8</td>
<td>129</td>
<td>41.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>454.calculix</td>
<td>223</td>
<td>37.0</td>
<td>222</td>
<td>37.2</td>
<td>222</td>
<td>37.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>90.4</td>
<td>117</td>
<td>90.4</td>
<td>117</td>
<td>90.6</td>
<td>117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td>261</td>
<td>37.8</td>
<td>296</td>
<td>33.2</td>
<td>264</td>
<td>37.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>470.lbm</td>
<td>47.6</td>
<td>288</td>
<td>47.0</td>
<td>292</td>
<td>46.8</td>
<td>293</td>
<td></td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td>154</td>
<td>72.7</td>
<td>155</td>
<td>72.0</td>
<td>154</td>
<td>72.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>277</td>
<td>70.2</td>
<td>270</td>
<td>72.2</td>
<td>277</td>
<td>70.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>/proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Platform Notes

BIOS Configuration:
HP Power Profile set to Maximum Performance
Collaborative Power Control set to Disabled
Continued on next page
Platform Notes (Continued)

Thermal Configuration set to Increased Cooling
Intel HyperThreading set to Disabled

Sysinfo program /cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdf5032aaa42e583f96b07f99d3
running on localhost Fri Dec 9 07:30:54 2011

This section contains SUT (System Under Test) info as seen by
some common utilities. To remove or add to this section, see:
http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2670 0 @ 2.60GHz
  2 "physical id"s (chips)
  16 "processors"
  cores, siblings (Caution: counting these is hw and system dependent. The
  following excerpts from /proc/cpuinfo might not be reliable. Use with
  caution.)
    cpu cores : 8
    siblings : 8
    physical 0: cores 0 1 2 3 4 5 6 7
    physical 1: cores 0 1 2 3 4 5 6 7
  cache size : 20480 KB

From /proc/meminfo
  MemTotal:       65937768 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
  Red Hat Enterprise Linux Server release 6.1 (Santiago)

From /etc/*release* /etc/*version*
  redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
  system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)

uname -a:
  Linux localhost 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10 15:42:40 EDT
  2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 9 07:27

SPEC is set to: /cpu2006
  Filesystem    Type    Size  Used  Avail Use% Mounted on
  /dev/sda3     ext4       686G  27G   625G   5% /

Additional information from dmidecode:
  BIOS HP P75 11/18/2011
  Memory:
    16x Not Specified Not Specified 4 GB 1333 MHz 2 rank

Continued on next page
Hewlett-Packard Company
ProLiant SL230s Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPEC CFP2006 Result
SPECfp2006 = Not Run
SPECfp_base2006 = 72.8

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company
Test date: Dec-2011
Hardware Availability: Jun-2012
Software Availability: Dec-2011

Platform Notes (Continued)
(End of data from sysinfo program)

General Notes
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64"
OMP_NUM_THREADS = "8"
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Base Compiler Invocation
C benchmarks:
   icc  -m64
C++ benchmarks:
   icpc -m64
Fortran benchmarks:
   ifort -m64
Benchmarks using both Fortran and C:
   icc  -m64 ifort -m64

Base Portability Flags
410.bwaves: -DSPEC_CPU_LP64
416.games: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64 -nofor_main
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64
**SPEC CFP2006 Result**

**Hewlett-Packard Company**

ProLiant SL230s Gen8  
(2.60 GHz, Intel Xeon E5-2670)

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>72.8</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3  
**Test date:** Dec-2011  
**Test sponsor:** Hewlett-Packard Company  
**Hardware Availability:** Jun-2012  
**Tested by:** Hewlett-Packard Company  
**Software Availability:** Dec-2011

**Base Optimization Flags**

**C benchmarks:**
- `xAVX`  
- `ipo`  
- `-03`  
- `-no-prec-div`  
- `-static`  
- `-parallel`  
- `-opt-prefetch`  
- `-ansi-alias`

**C++ benchmarks:**
- `xAVX`  
- `ipo`  
- `-03`  
- `-no-prec-div`  
- `-static`  
- `-opt-prefetch`  
- `-ansi-alias`

**Fortran benchmarks:**
- `xAVX`  
- `ipo`  
- `-03`  
- `-no-prec-div`  
- `-static`  
- `-parallel`  
- `-opt-prefetch`

**Benchmarks using both Fortran and C:**
- `xAVX`  
- `ipo`  
- `-03`  
- `-no-prec-div`  
- `-static`  
- `-parallel`  
- `-opt-prefetch`  
- `-ansi-alias`

The flags files that were used to format this result can be browsed at:


You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml](http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml)
- [http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.xml](http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.xml)

---

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.  
Originally published on 4 December 2012.