### SPEC® CFP2006 Result

**Hewlett-Packard Company**

ProLiant DL380p Gen8
(1.80 GHz, Intel Xeon E5-2603 v2)

<table>
<thead>
<tr>
<th>SPECfp® 2006</th>
<th>52.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>50.7</td>
</tr>
</tbody>
</table>

CPU2006 license: 3  
Test sponsor: Hewlett-Packard Company  
Tested by: Hewlett-Packard Company  
Test date: Oct-2013

**Hardware**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2603 v2</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td></td>
</tr>
<tr>
<td>CPU MHz</td>
<td>1800</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>8 cores, 2 chips, 4 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
</table>
| Operating System | SUSE Linux Enterprise Server 11 (x86_64) SP3  
Kernel 3.0.76-0.11-default |
| Compiler | C/C++: Version 14.0.0.080 of Intel C++ Studio XE  
for Linux;  
Fortran: Version 14.0.0.080 of Intel Fortran  
Studio XE for Linux |
| Auto Parallel | Yes |
| File System | ext3 |
| System State | Run level 3 (multi-user) |

**Results**

- ** SPECfp®2006 = 52.2**
- ** SPECfp_base2006 = 50.7**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>19.8</td>
</tr>
<tr>
<td>416.gamess</td>
<td>18.5</td>
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<tr>
<td>433.milc</td>
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<td>434.zeusmp</td>
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<tr>
<td>435.gromacs</td>
<td>24.5</td>
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<tr>
<td>436.cactusADM</td>
<td>118</td>
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<tr>
<td>437.leslie3d</td>
<td></td>
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<tr>
<td>444.namd</td>
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<td>447.dealII</td>
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<td>450.soplex</td>
<td>23.7</td>
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<tr>
<td>453.povray</td>
<td>29.1</td>
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<td>454.calculix</td>
<td>26.2</td>
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<tr>
<td>459.GemsFDTD</td>
<td>113</td>
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<tr>
<td>465.tonto</td>
<td>24.6</td>
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<tr>
<td>470.lbm</td>
<td>22.7</td>
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<tr>
<td>481.wrf</td>
<td>51.2</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>44.3</td>
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</table>

Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
Hewlett-Packard Company

ProLiant DL380p Gen8
(1.80 GHz, Intel Xeon E5-2603 v2)

SPECfp2006 = 52.2
SPECfp_base2006 = 50.7

Results Table

<table>
<thead>
<tr>
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<th>Seconds</th>
<th>Ratio</th>
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<td>482.sphinx3</td>
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</tbody>
</table>

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Reclaim mode enabled with:
    echo 1 > /proc/sys/vm/zone_reclaim_mode
Transparent Huge Pages enabled with:
    echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
    echo 1 > /proc/sys/vm/drop_caches
Disabled unused Linux services through "stop_services.sh" before running.
Hewlett-Packard Company

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(1.80 GHz, Intel Xeon E5-2603 v2)

SPECfp2006 = 52.2
SPECfp_base2006 = 50.7

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Test date: Oct-2013
Tested by: Hewlett-Packard Company
Hardware Availability: Sep-2013
Software Availability: Sep-2013

Platform Notes

BIOS Configuration:
- HP Power Profile set to Maximum Performance
- Minimum Processor Idle Power Core State set to C1E
- Minimum Processor Idle Power Package State set to C6 (retention)
- Energy/Performance Bias is set to Maximum Performance
- Memory Power Savings Mode set to Maximum Performance
- Thermal Configuration set to Maximum Cooling
- Collaborative Power Control set to Disabled
- Dynamic Power Capping Functionality set to Disabled
- Processor Power and Utilization Monitoring set to Disabled
- Memory Refresh Rate set to 1x

Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3ceed98f191
running on d1380p-gen8-0s9 Sat Oct 19 19:03:48 2013

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 E5-2603 v2 @ 1.80GHz
- 2 "physical id"s (chips)
- 8 "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: 4
  - siblings: 4
  - physical 0: cores 0 1 2 3
  - physical 1: cores 0 1 2 3
- cache size: 10240 KB

From /proc/meminfo
- MemTotal: 132130192 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
- SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
- SuSE-release:
  - SUSE Linux Enterprise Server 11 (x86_64)
  - VERSION = 11
  - PATCHLEVEL = 3

uname -a:
- Linux dl380p-gen8-0s9 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 19 18:31 last=S

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Platform Notes (Continued)

SPEC is set to: /cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext3 135G 14G 121G 10% /

Additional information from dmidecode:
BIOS HP P70 09/08/2013
Memory:
  16x HP 689911-071 8 GB 1333 MHz
  8x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of memory is 128 GB and the dmidecode description should read as the following:
   16x HP 689911-071 8 GB 1333 MHz

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"
OMP_NUM_THREADS = "8"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

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.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main

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Base Portability Flags (Continued)

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
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

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

Peak Compiler Invocation

C benchmarks:
icc  -m64

C++ benchmarks:
icpc  -m64

Fortran benchmarks:
ifort  -m64

Benchmarks using both Fortran and C:
icc  -m64 ifort  -m64
Hewlett-Packard Company
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Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ano-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:
444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ano-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ano-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:
410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ano-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ano-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-ano-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4
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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

- 435.gromacs: basepeak = yes
- 436.cactusADM: basepeak = yes
- 454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias
- 481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.xml

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For other inquiries, please contact webmaster@spec.org.

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