



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp®2006 = **84.6**

ProLiant BL460c Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECfp_base2006 = **80.2**

CPU2006 license: 3

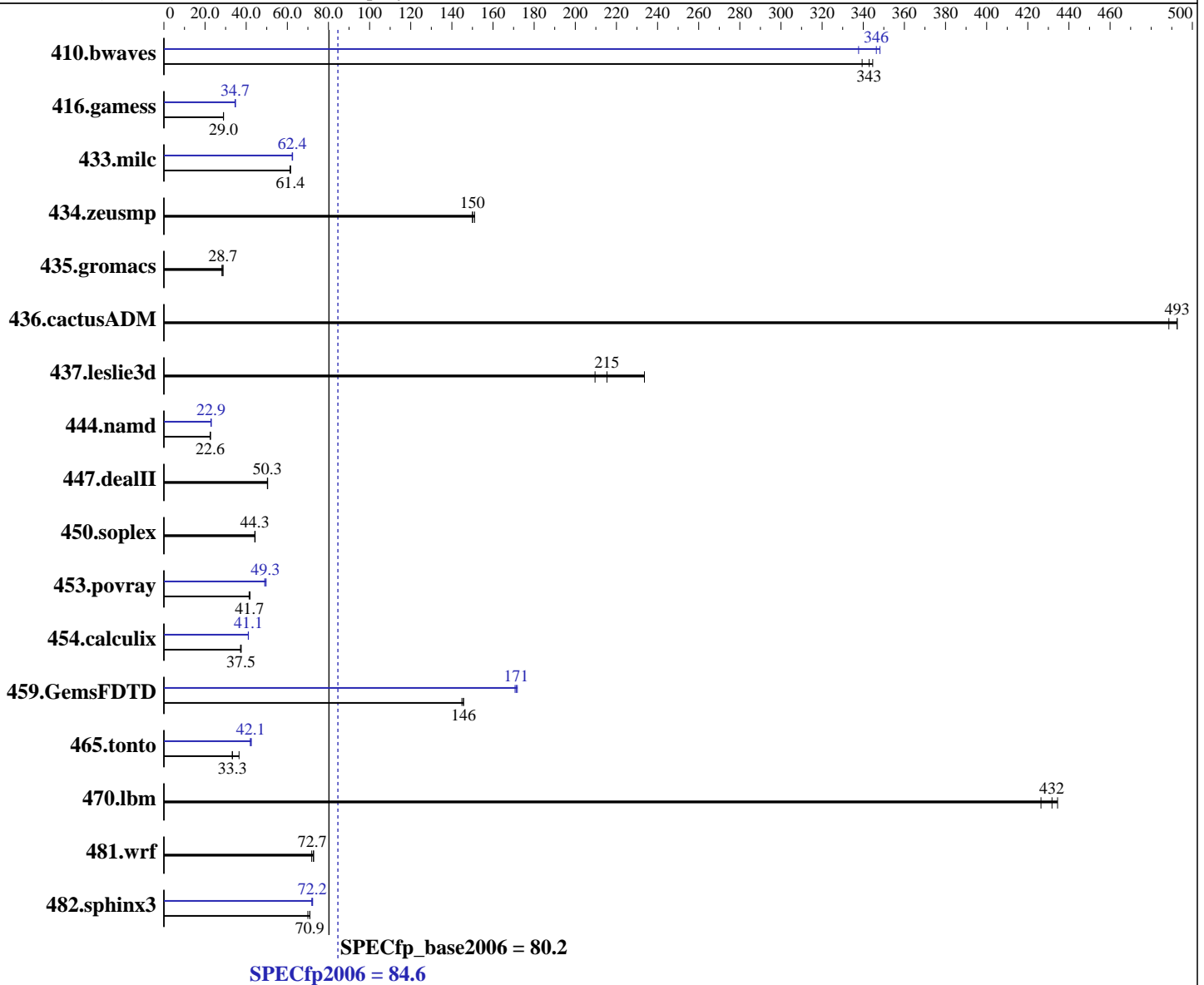
Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012



Hardware

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, 2 threads/core
 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.3, (Santiago)
 Kernel 2.6.32-279.el6.x86_64
 Compiler: C/C++: Version 12.1.2.273 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.2.273 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = **84.6**

ProLiant BL460c Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECfp_base2006 = **80.2**

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 2 x 146 GB 6G SAS 15 K, RAID 1
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01
HP Array Configuration Utility, CLI version

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	40.0	339	39.4	345	<u>39.6</u>	<u>343</u>	<u>39.2</u>	<u>346</u>	39.0	348	40.2	338
416.gamess	676	29.0	676	29.0	<u>676</u>	<u>29.0</u>	<u>564</u>	<u>34.7</u>	563	34.8	566	34.6
433.milc	150	61.4	<u>149</u>	<u>61.4</u>	149	61.6	147	62.6	147	62.4	<u>147</u>	<u>62.4</u>
434.zeusmp	<u>60.6</u>	<u>150</u>	60.6	150	60.2	151	<u>60.6</u>	<u>150</u>	60.6	150	60.2	151
435.gromacs	253	28.2	<u>249</u>	<u>28.7</u>	249	28.7	253	28.2	<u>249</u>	<u>28.7</u>	249	28.7
436.cactusADM	<u>24.3</u>	<u>493</u>	24.5	489	24.3	493	<u>24.3</u>	<u>493</u>	24.5	489	24.3	493
437.leslie3d	<u>43.6</u>	<u>215</u>	44.8	210	40.2	234	<u>43.6</u>	<u>215</u>	44.8	210	40.2	234
444.namd	355	22.6	<u>355</u>	<u>22.6</u>	355	22.6	<u>349</u>	<u>22.9</u>	349	23.0	350	22.9
447.dealII	227	50.3	227	50.5	<u>227</u>	<u>50.3</u>	227	50.3	227	50.5	<u>227</u>	<u>50.3</u>
450.soplex	188	44.4	189	44.2	<u>188</u>	<u>44.3</u>	188	44.4	189	44.2	<u>188</u>	<u>44.3</u>
453.povray	<u>128</u>	<u>41.7</u>	128	41.4	127	41.9	109	49.0	<u>108</u>	<u>49.3</u>	107	49.7
454.calculix	220	37.5	<u>220</u>	<u>37.5</u>	222	37.2	<u>201</u>	<u>41.1</u>	201	41.1	201	41.0
459.GemsFDTD	<u>72.8</u>	<u>146</u>	72.8	146	73.2	145	61.7	172	62.1	171	<u>61.9</u>	<u>171</u>
465.tonto	<u>295</u>	<u>33.3</u>	269	36.5	296	33.2	234	42.0	232	42.5	<u>233</u>	<u>42.1</u>
470.lbm	32.2	426	31.6	434	<u>31.8</u>	<u>432</u>	32.2	426	31.6	434	<u>31.8</u>	<u>432</u>
481.wrf	153	72.8	<u>154</u>	<u>72.7</u>	155	71.9	153	72.8	<u>154</u>	<u>72.7</u>	155	71.9
482.sphinx3	<u>275</u>	<u>70.9</u>	275	70.9	279	70.0	270	72.3	271	71.9	<u>270</u>	<u>72.2</u>

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/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --localalloc runspec <etc>
Drive Write Cache set to Enabled in HP Array Configuration Utility,
CLI version
Accelerator Ratio for Reads/Writes set to = 100% Read / 0% Write
in HP Array Configuration Utility, CLI version
```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 84.6

ProLiant BL460c Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECfp_base2006 = 80.2

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

Platform Notes

BIOS Configuration:

HP Power Regulator set to HP Static High Performance Mode
HP Power Profile set to Custom
Energy/Performance Bias set to Maximum Performance
Thermal Configuration set to Maximum Cooling
Collaborative Power Control set to Disabled
Processor Power and Utilization Monitoring set to Disabled
Memory Power Savings Mode set to Performance

Sysinfo program /cpu2006/config/sysinfo.rev6800

\$Rev: 6800 \$ \$Date: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3
running on BL460c-Gen8-1 Thu Nov 8 09:54:35 2012

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)
 32 "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  : 16
  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: 132259844 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

/usr/bin/lsb_release -d

```
Red Hat Enterprise Linux Server release 6.3 (Santiago)
```

From /etc/*release* /etc/*version*

```
redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

uname -a:

```
Linux BL460c-Gen8-1 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36 EDT 2012
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Nov 8 05:50

SPEC is set to: /cpu2006

```
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext4 133G 12G 114G 10% /
Continued on next page
```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 84.6

ProLiant BL460c Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECfp_base2006 = 80.2

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

Platform Notes (Continued)

Additional information from dmidecode:

BIOS HP I31 08/12/2012

Memory:

12x HP Not Specified 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)

Correct dmidecode output:

BIOS HP I31 08/12/2012

Memory:

16 x HP Not Specified 8 GB 1600 MHz 2 rank

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 = "16"

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.gamess: -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.lelie3d: -DSPEC_CPU_LP64

444.namd: -DSPEC_CPU_LP64

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 84.6

ProLiant BL460c Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECfp_base2006 = 80.2

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

Base Portability Flags (Continued)

```

447.deallI: -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 -static -parallel -opt-prefetch
-ansi-alias

```

C++ benchmarks:

```

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

```

Fortran benchmarks:

```

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

```

Benchmarks using both Fortran and C:

```

-xAVX -ipo -O3 -no-prec-div -static -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

```

Peak Portability Flags

Same as Base Portability Flags



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 84.6

ProLiant BL460c Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECfp_base2006 = 80.2

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -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)
-no-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)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-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)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECfp2006 = 84.6

ProLiant BL460c Gen8
(2.60 GHz, Intel Xeon E5-2670)

SPECfp_base2006 = 80.2

CPU2006 license: 3

Test date: Nov-2012

Test sponsor: Hewlett-Packard Company

Hardware Availability: Oct-2012

Tested by: Hewlett-Packard Company

Software Availability: Jun-2012

Peak Optimization Flags (Continued)

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-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.html>

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/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.
Report generated on Thu Jul 24 13:25:10 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 4 December 2012.