



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECfp®2006 = **76.8**

ProLiant XL220a Gen8 v2  
(3.60 GHz, Intel Xeon E3-1280 v3)

SPECfp\_base2006 = **75.3**

CPU2006 license: 3

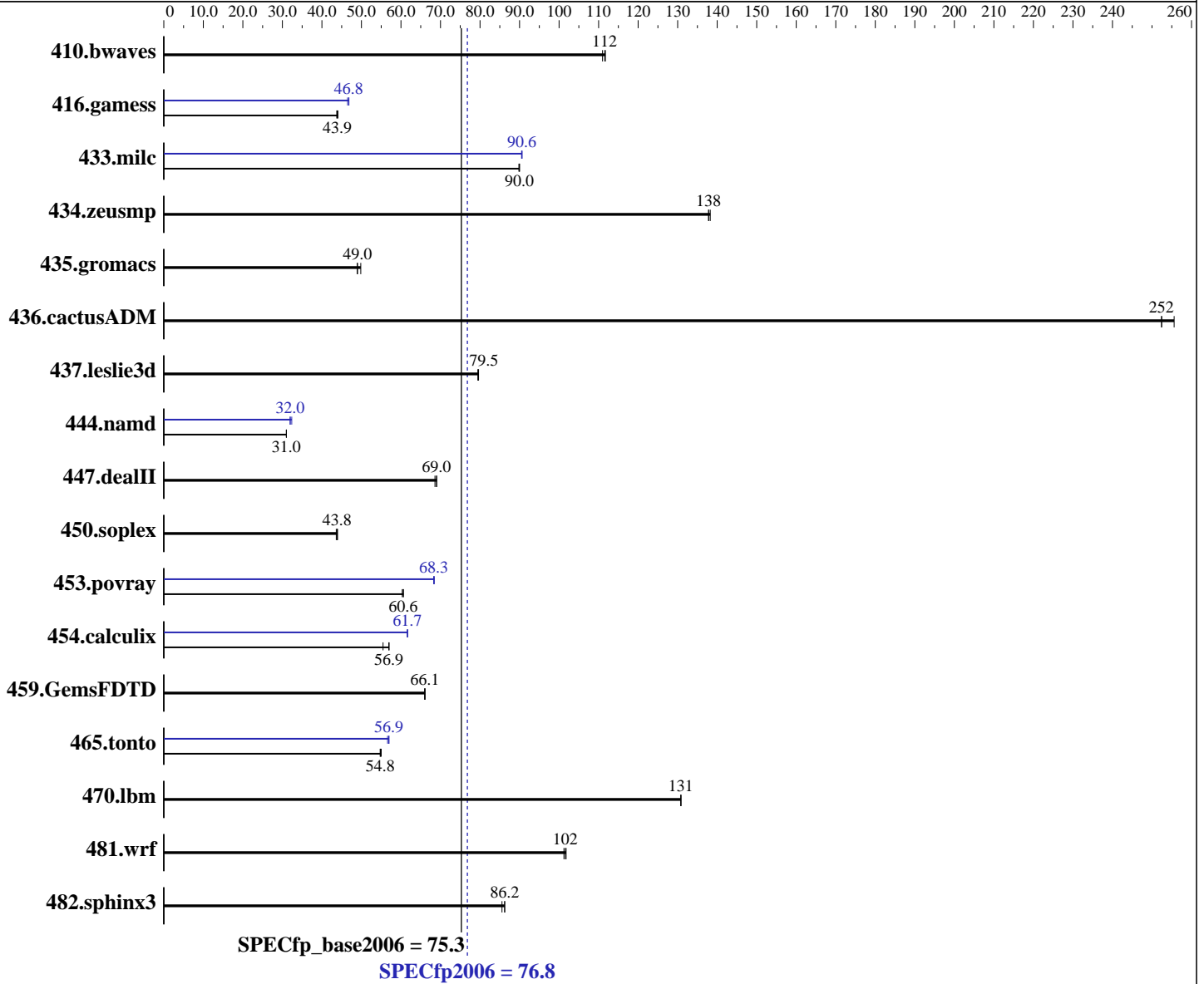
Test date: May-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jun-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2013



SPECfp\_base2006 = 75.3  
SPECfp2006 = 76.8

### Hardware

CPU Name: Intel Xeon E3-1280 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 3600  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 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: 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)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECfp2006 = **76.8**

ProLiant XL220a Gen8 v2  
(3.60 GHz, Intel Xeon E3-1280 v3)

SPECfp\_base2006 = **75.3**

CPU2006 license: 3

Test date: May-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jun-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2013

L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 16 GB (4 x 4 GB 2Rx8 PC3-12800E-11, ECC)  
Disk Subsystem: 1 x 300 GB 15 K SAS, RAID 0  
Other Hardware: None

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

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	122	111	<u>122</u>	<u>112</u>	122	112	122	111	<u>122</u>	<u>112</u>	122	112
416.gamess	445	44.0	<u>446</u>	<u>43.9</u>	448	43.8	418	46.8	421	46.5	<u>419</u>	<u>46.8</u>
433.milc	102	89.8	<u>102</u>	<u>90.0</u>	102	90.0	<u>101</u>	<u>90.6</u>	101	90.5	101	90.7
434.zeusmp	66.0	138	<u>66.0</u>	<u>138</u>	65.8	138	66.0	138	<u>66.0</u>	<u>138</u>	65.8	138
435.gromacs	143	49.8	146	48.9	<u>146</u>	<u>49.0</u>	143	49.8	146	48.9	<u>146</u>	<u>49.0</u>
436.cactusADM	<u>47.3</u>	<u>252</u>	47.3	252	46.8	256	<u>47.3</u>	<u>252</u>	47.3	252	46.8	256
437.leslie3d	<u>118</u>	<u>79.5</u>	118	79.5	118	79.6	<u>118</u>	<u>79.5</u>	118	79.5	118	79.6
444.namd	<u>259</u>	<u>31.0</u>	259	31.0	259	31.0	251	32.0	248	32.4	<u>251</u>	<u>32.0</u>
447.dealII	166	69.0	167	68.6	<u>166</u>	<u>69.0</u>	166	69.0	167	68.6	<u>166</u>	<u>69.0</u>
450.soplex	190	44.0	<u>190</u>	<u>43.8</u>	191	43.6	190	44.0	<u>190</u>	<u>43.8</u>	191	43.6
453.povray	<u>87.8</u>	<u>60.6</u>	88.2	60.3	87.8	60.6	77.7	68.4	77.9	68.3	<u>77.9</u>	<u>68.3</u>
454.calculix	145	57.0	<u>145</u>	<u>56.9</u>	149	55.5	134	61.6	<u>134</u>	<u>61.7</u>	134	61.7
459.GemsFDTD	161	66.0	161	66.1	<u>161</u>	<u>66.1</u>	161	66.0	161	66.1	<u>161</u>	<u>66.1</u>
465.tonto	180	54.8	179	55.0	<u>180</u>	<u>54.8</u>	<u>173</u>	<u>56.9</u>	174	56.6	173	57.0
470.lbm	105	131	105	131	<u>105</u>	<u>131</u>	105	131	105	131	<u>105</u>	<u>131</u>
481.wrf	110	101	110	102	<u>110</u>	<u>102</u>	110	101	110	102	<u>110</u>	<u>102</u>
482.sphinx3	226	86.2	228	85.6	<u>226</u>	<u>86.2</u>	226	86.2	228	85.6	<u>226</u>	<u>86.2</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

## Platform Notes

BIOS Configuration:  
Intel Hyperthreading Options set to Disabled  
HP Power Profile set to Maximum Performance  
Minimum Processor Idle Power Core State set to C6 State  
Collaborative Power Control set to Disabled  
Thermal Configuration set to Maximum Cooling  
Processor Power and Utilization Monitoring set to Disabled  
Memory Refresh Rate set to Disabled

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

SPECfp2006 = 76.8

ProLiant XL220a Gen8 v2  
(3.60 GHz, Intel Xeon E3-1280 v3)

SPECfp\_base2006 = 75.3

CPU2006 license: 3

Test date: May-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jun-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2013

### Platform Notes (Continued)

Sysinfo program /cpu2006/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on XL220a-Gen8-v2 Sat May 17 16:21:21 2014

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 E3-1280 v3 @ 3.60GHz
 1 "physical id"s (chips)
 4 "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
  cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal:      16291732 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 XL220a-Gen8-v2 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 May 17 16:12 last=S
```

```
SPEC is set to: /cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       ext3  271G   13G  258G   5% /
```

```
Additional information from dmidecode:
BIOS HP P94 04/29/2014
Memory:
4x HP 669238-071 4 GB 1600 MHz
```

(End of data from sysinfo program)



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECfp2006 = 76.8**

ProLiant XL220a Gen8 v2  
(3.60 GHz, Intel Xeon E3-1280 v3)

**SPECfp\_base2006 = 75.3**

**CPU2006 license:** 3

**Test date:** May-2014

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Jun-2014

**Tested by:** Hewlett-Packard Company

**Software Availability:** Sep-2013

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact"  
LD\_LIBRARY\_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"  
OMP\_NUM\_THREADS = "4"

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  
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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-ansi-alias

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECfp2006 = 76.8**

ProLiant XL220a Gen8 v2  
(3.60 GHz, Intel Xeon E3-1280 v3)

**SPECfp\_base2006 = 75.3**

**CPU2006 license:** 3

**Test date:** May-2014

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Jun-2014

**Tested by:** Hewlett-Packard Company

**Software Availability:** Sep-2013

## Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -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

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Hewlett-Packard Company**

**SPECfp2006 = 76.8**

ProLiant XL220a Gen8 v2  
(3.60 GHz, Intel Xeon E3-1280 v3)

**SPECfp\_base2006 = 75.3**

**CPU2006 license:** 3

**Test date:** May-2014

**Test sponsor:** Hewlett-Packard Company

**Hardware Availability:** Jun-2014

**Tested by:** Hewlett-Packard Company

**Software Availability:** Sep-2013

## Peak Optimization Flags (Continued)

444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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: basepeak = yes

416.gamess: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(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

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -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-revD.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-revD.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Hewlett-Packard Company

ProLiant XL220a Gen8 v2  
(3.60 GHz, Intel Xeon E3-1280 v3)

**SPECfp2006 = 76.8**

**SPECfp\_base2006 = 75.3**

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

**Test date:** May-2014  
**Hardware Availability:** Jun-2014  
**Software Availability:** Sep-2013

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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 22:54:19 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 10 June 2014.