



SPEC[®] CFP2006 Result

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Hewlett-Packard Company

SPECfp[®]2006 = **80.2**

ProLiant BL460c Gen8
(2.40 GHz, Intel Xeon E5-2630L v2)

SPECfp_base2006 = **77.1**

CPU2006 license: 3

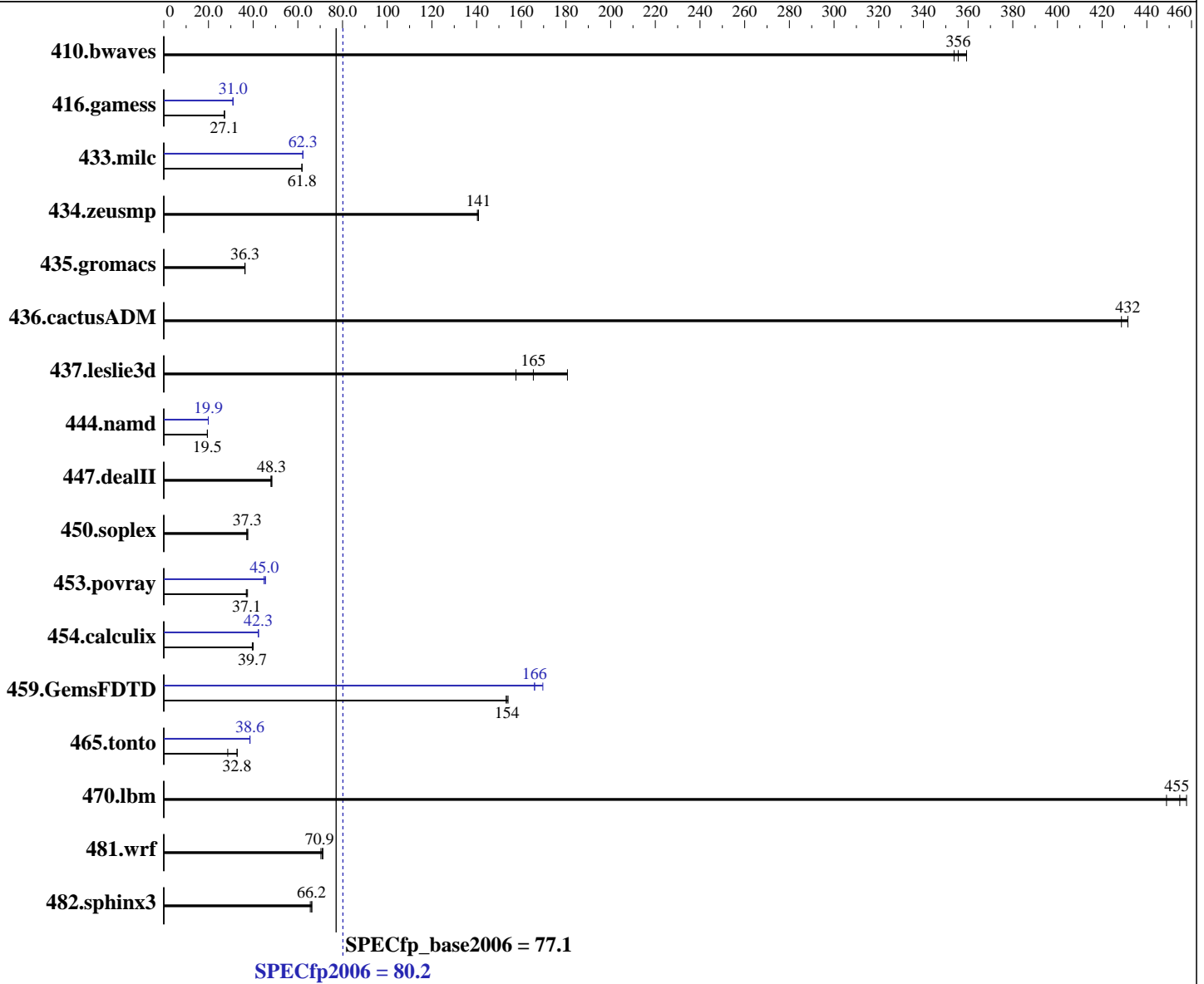
Test date: Oct-2013

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2013

Tested by: Hewlett-Packard Company

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2630L v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
 CPU(s) orderable: 1,2 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)

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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 146 GB 15 K SAS, RAID 1
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	38.4	354	38.2	356	37.8	359	38.4	354	38.2	356	37.8	359
416.gamess	722	27.1	721	27.2	722	27.1	632	31.0	632	31.0	632	31.0
433.milc	148	61.8	148	61.8	148	61.9	147	62.3	147	62.3	148	62.2
434.zeusmp	64.6	141	64.6	141	64.8	140	64.6	141	64.6	141	64.8	140
435.gromacs	197	36.3	196	36.4	197	36.3	197	36.3	196	36.4	197	36.3
436.cactusADM	27.7	432	27.9	429	27.7	432	27.7	432	27.9	429	27.7	432
437.leslie3d	52.0	181	56.8	165	59.6	158	52.0	181	56.8	165	59.6	158
444.namd	411	19.5	411	19.5	411	19.5	403	19.9	403	19.9	403	19.9
447.dealII	237	48.3	236	48.4	239	47.9	237	48.3	236	48.4	239	47.9
450.soplex	224	37.3	225	37.1	222	37.6	224	37.3	225	37.1	222	37.6
453.povray	143	37.1	142	37.5	144	36.9	117	45.6	118	44.9	118	45.0
454.calculix	208	39.7	206	40.0	208	39.6	195	42.4	195	42.3	195	42.3
459.GemsFDTD	69.3	153	68.9	154	69.1	154	62.5	170	63.9	166	63.9	166
465.tonto	300	32.8	299	32.9	344	28.6	255	38.6	256	38.5	255	38.6
470.lbm	30.6	449	30.0	458	30.2	455	30.6	449	30.0	458	30.2	455
481.wrf	157	70.9	159	70.3	157	71.2	157	70.9	159	70.3	157	71.2
482.sphinx3	295	66.2	297	65.6	294	66.3	295	66.2	297	65.6	294	66.3

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"
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.

Platform Notes

BIOS Configuration:
Intel Hyperthreading Options set to Disabled
HP Power Profile set to Maximum Performance
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Platform Notes (Continued)

Minimum Processor Idle Power Core State set to C1E
 Minimum Processor Idle Power Package State set to C6 (non-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 #\$ e86d102572650a6e4d596a3cee98f191
 running on linux-bl460cgen8-bay11-speed Thu Oct 10 05:33:42 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 E5-2630L v2 @ 2.40GHz
 2 "physical id"s (chips)
 12 "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    : 6
  siblings     : 6
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
 cache size   : 15360 KB
```

```
From /proc/meminfo
MemTotal:      132130196 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 linux-bl460cgen8-bay11-speed 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 9 22:44 last=S

SPEC is set to: /cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
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Platform Notes (Continued)

/dev/sda3 ext3 127G 9.2G 112G 8% /

Additional information from dmidecode:

BIOS HP I31 09/08/2013

Memory:

16x HP 689911-071 8 GB 1600 MHz

(End of data from sysinfo program)

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 = "12"

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

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Base Portability Flags (Continued)

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

433.milc: -xAVX(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:

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: basepeak = yes

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-

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

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.html>
<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

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

<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.xml>
<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

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