



SPEC® CFP2006 Result

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Hewlett-Packard Company

ProLiant DL380 G7
(3.46 GHz, Intel Xeon X5690)

SPECfp®_rate2006 = 267

SPECfp_rate_base2006 = 262

CPU2006 license: 3

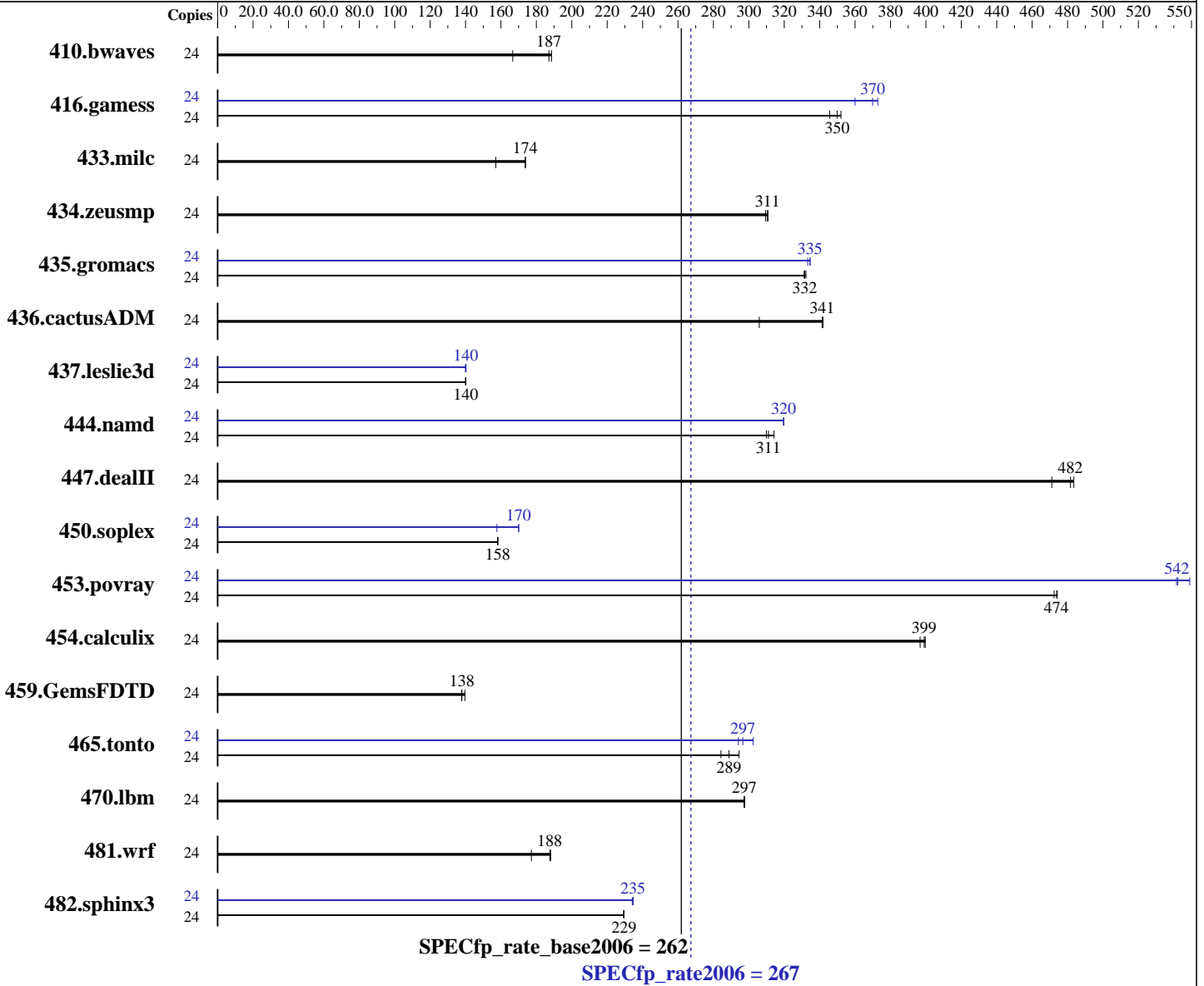
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Oct-2011

Hardware Availability: Feb-2011

Software Availability: Sep-2011



Hardware

CPU Name: Intel Xeon X5690
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz
 CPU MHz: 3467
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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 6.1, Kernel 2.6.32-131.0.15.el6.x86_64
 Compiler: C/C++/Fortran: Version 12.1.0.225 of Intel Compiler XE Build 20110803
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 146 GB 15 K SAS
Other Hardware: None

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1730	189	<u>1743</u>	<u>187</u>	1957	167	24	1730	189	<u>1743</u>	<u>187</u>	1957	167
416.gamess	24	<u>1343</u>	<u>350</u>	1359	346	1335	352	24	1305	360	1260	373	<u>1270</u>	<u>370</u>
433.milc	24	1402	157	1267	174	<u>1268</u>	<u>174</u>	24	1402	157	1267	174	<u>1268</u>	<u>174</u>
434.zeusmp	24	703	311	<u>703</u>	<u>311</u>	706	309	24	703	311	<u>703</u>	<u>311</u>	706	309
435.gromacs	24	<u>517</u>	<u>332</u>	517	331	516	332	24	512	335	<u>512</u>	<u>335</u>	514	333
436.cactusADM	24	938	306	<u>840</u>	<u>341</u>	839	342	24	938	306	<u>840</u>	<u>341</u>	839	342
437.leslie3d	24	1609	140	<u>1610</u>	<u>140</u>	1612	140	24	1608	140	<u>1610</u>	<u>140</u>	1612	140
444.namd	24	621	310	612	314	<u>619</u>	<u>311</u>	24	<u>602</u>	<u>320</u>	602	320	602	320
447.dealII	24	583	471	568	484	<u>570</u>	<u>482</u>	24	583	471	568	484	<u>570</u>	<u>482</u>
450.soplex	24	1265	158	1266	158	<u>1266</u>	<u>158</u>	24	1269	158	<u>1178</u>	<u>170</u>	1177	170
453.povray	24	<u>269</u>	<u>474</u>	269	474	270	472	24	<u>235</u>	<u>542</u>	233	549	236	542
454.calculix	24	499	397	495	400	<u>496</u>	<u>399</u>	24	499	397	495	400	<u>496</u>	<u>399</u>
459.GemsFDTD	24	1823	140	<u>1846</u>	<u>138</u>	1848	138	24	1823	140	<u>1846</u>	<u>138</u>	1848	138
465.tonto	24	831	284	<u>818</u>	<u>289</u>	802	294	24	<u>796</u>	<u>297</u>	803	294	781	302
470.lbm	24	1108	298	1109	297	<u>1109</u>	<u>297</u>	24	1108	298	1109	297	<u>1109</u>	<u>297</u>
481.wrf	24	1513	177	<u>1429</u>	<u>188</u>	1425	188	24	1513	177	<u>1429</u>	<u>188</u>	1425	188
482.sphinx3	24	2040	229	2038	229	<u>2039</u>	<u>229</u>	24	1998	234	<u>1994</u>	<u>235</u>	1993	235

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

Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages disabled with:
echo never > /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>
```



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Platform Notes

BIOS configuration:
HP Power Profile set to Maximum Performance
Thermal Configuration set to Increased Cooling
Data Reuse set to Disabled

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006/smartheap:/cpu2006/ic12.1-libs/ia32:/cpu2006/ic12.1-libs/intel64"

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



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Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak 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.deallI: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

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

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes
 470.lbm: basepeak = yes
 482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
 -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -fno-alias -auto-ilp32
 447.dealIII: basepeak = yes
 450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -opt-malloc-options=3
 453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes
 416.gamess: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
 459.GemsFDTD: basepeak = yes

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Peak Optimization Flags (Continued)

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -static -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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-Intel-Linux-Settings-flags.20111122.html>
<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.html>

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

<http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20111122.xml>
<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml>

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