



SPEC[®] CFP2006 Result

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Hewlett-Packard Company

SPECfp[®]_rate2006 = 144

ProLiant DL380 G7
(2.13 GHz, Intel Xeon L5630)

SPECfp_rate_base2006 = 142

CPU2006 license: 3

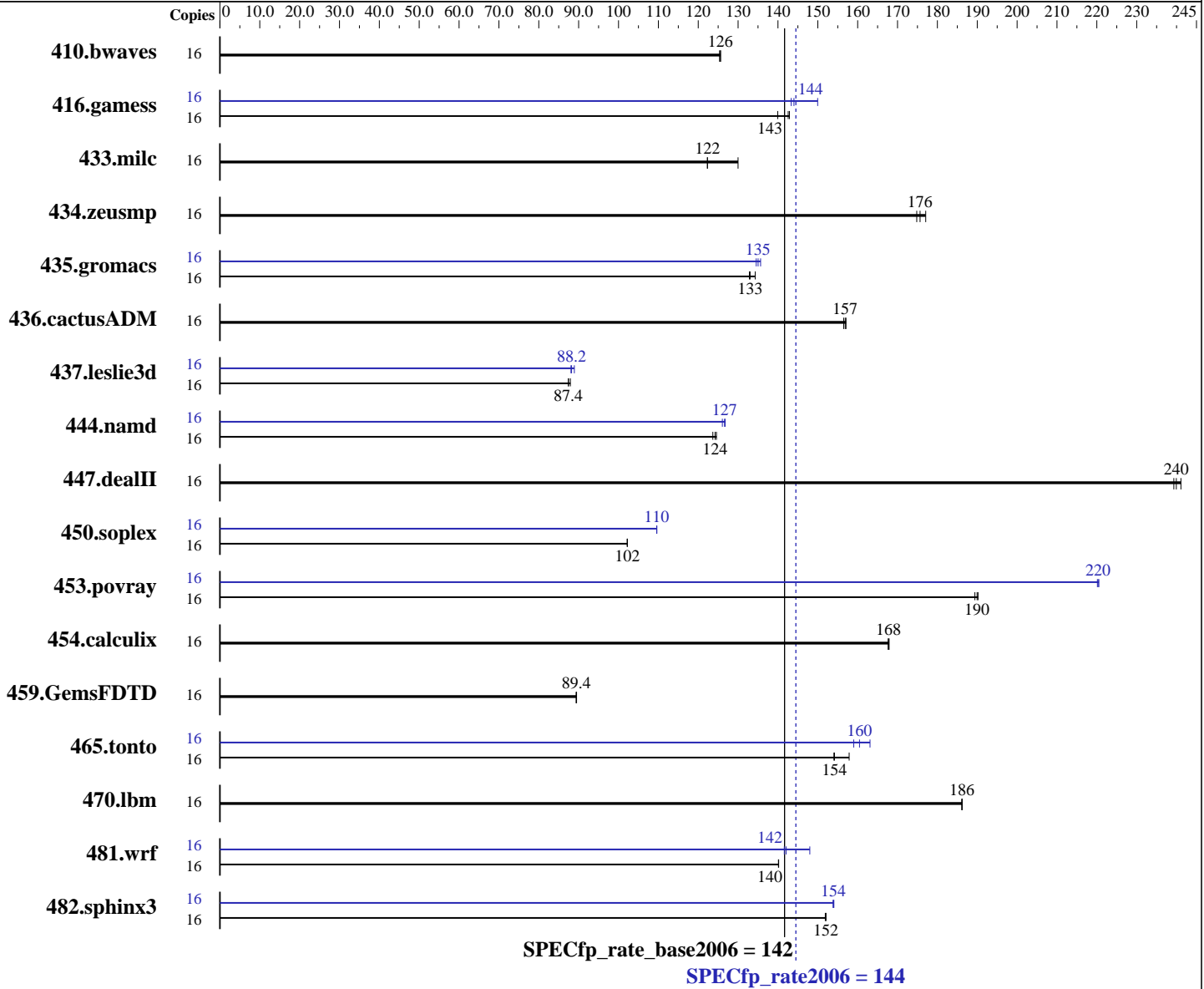
Test date: Oct-2011

Test sponsor: Hewlett-Packard Company

Hardware Availability: Mar-2010

Tested by: Hewlett-Packard Company

Software Availability: Sep-2011



Hardware

CPU Name: Intel Xeon L5630
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 2133
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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

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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	16	1735	125	1731	126	<u>1731</u>	<u>126</u>	16	1735	125	1731	126	<u>1731</u>	<u>126</u>
416.gamess	16	2193	143	2238	140	<u>2197</u>	<u>143</u>	16	<u>2175</u>	<u>144</u>	2089	150	2186	143
433.milc	16	1130	130	1201	122	<u>1201</u>	<u>122</u>	16	1130	130	1201	122	<u>1201</u>	<u>122</u>
434.zeusmp	16	<u>829</u>	<u>176</u>	822	177	833	175	16	<u>829</u>	<u>176</u>	822	177	833	175
435.gromacs	16	<u>859</u>	<u>133</u>	851	134	860	133	16	<u>846</u>	<u>135</u>	842	136	849	135
436.cactusADM	16	<u>1219</u>	<u>157</u>	1222	157	1217	157	16	<u>1219</u>	<u>157</u>	1222	157	1217	157
437.leslie3d	16	<u>1720</u>	<u>87.4</u>	1720	87.4	1711	87.9	16	1708	88.1	<u>1705</u>	<u>88.2</u>	1691	88.9
444.namd	16	1030	125	1038	124	<u>1033</u>	<u>124</u>	16	1018	126	<u>1014</u>	<u>127</u>	1012	127
447.dealII	16	759	241	765	239	<u>763</u>	<u>240</u>	16	759	241	765	239	<u>763</u>	<u>240</u>
450.soplex	16	1305	102	1306	102	<u>1305</u>	<u>102</u>	16	1218	110	1218	110	<u>1218</u>	<u>110</u>
453.povray	16	449	189	448	190	<u>448</u>	<u>190</u>	16	387	220	386	221	<u>386</u>	<u>220</u>
454.calculix	16	786	168	787	168	<u>787</u>	<u>168</u>	16	786	168	787	168	<u>787</u>	<u>168</u>
459.GemsFDTD	16	1897	89.5	<u>1898</u>	<u>89.4</u>	1900	89.4	16	1897	89.5	<u>1898</u>	<u>89.4</u>	1900	89.4
465.tonto	16	997	158	1022	154	<u>1021</u>	<u>154</u>	16	965	163	<u>981</u>	<u>160</u>	990	159
470.lbm	16	<u>1181</u>	<u>186</u>	1180	186	1181	186	16	<u>1181</u>	<u>186</u>	1180	186	1181	186
481.wrf	16	1275	140	1275	140	<u>1275</u>	<u>140</u>	16	1208	148	1262	142	<u>1258</u>	<u>142</u>
482.sphinx3	16	<u>2051</u>	<u>152</u>	2053	152	2051	152	16	<u>2026</u>	<u>154</u>	2024	154	2027	154

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: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

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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