



SPEC[®] CFP2006 Result

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NEC Corporation

Express5800/120Bb-6
(Intel Xeon X5460)

SPECfp[®]_rate2006 = 75.8

SPECfp_rate_base2006 = 67.2

CPU2006 license: 9006

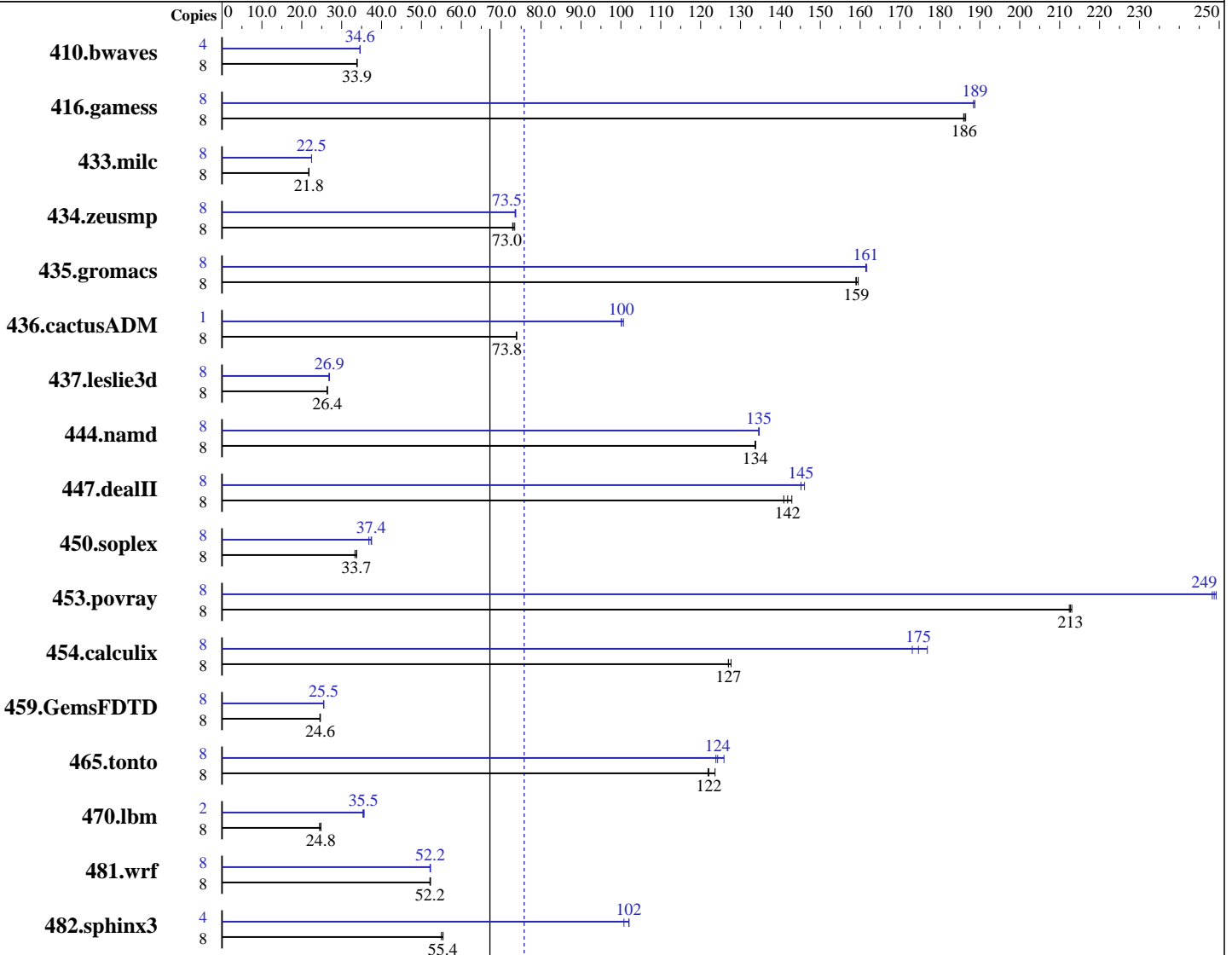
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2008

Hardware Availability: Feb-2008

Software Availability: Nov-2007



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Hardware

CPU Name: Intel Xeon X5460
 CPU Characteristics: 3.16 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 3166
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smpp
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
 Auto Parallel: Yes
 File System: ext2

Continued on next page



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L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 10000RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.tar.gz, Version 2.17

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3211	33.9	3211	33.9	<u>3211</u>	<u>33.9</u>	4	1570	34.6	1571	34.6	<u>1571</u>	<u>34.6</u>
416.gamess	8	842	186	<u>842</u>	<u>186</u>	840	186	8	<u>830</u>	<u>189</u>	830	189	832	188
433.milc	8	3372	21.8	<u>3373</u>	<u>21.8</u>	3373	21.8	8	3267	22.5	3271	22.4	<u>3269</u>	<u>22.5</u>
434.zeusmp	8	<u>997</u>	<u>73.0</u>	999	72.9	992	73.4	8	988	73.7	991	73.5	<u>990</u>	<u>73.5</u>
435.gromacs	8	<u>359</u>	<u>159</u>	359	159	358	160	8	<u>354</u>	<u>161</u>	354	161	353	162
436.cactusADM	8	1294	73.9	<u>1295</u>	<u>73.8</u>	1296	73.8	1	119	101	119	100	<u>119</u>	<u>100</u>
437.leslie3d	8	2853	26.4	2844	26.4	<u>2850</u>	<u>26.4</u>	8	2802	26.8	<u>2796</u>	<u>26.9</u>	2795	26.9
444.namd	8	480	134	480	134	<u>480</u>	<u>134</u>	8	477	135	477	135	<u>477</u>	<u>135</u>
447.dealII	8	641	143	650	141	<u>645</u>	<u>142</u>	8	<u>630</u>	<u>145</u>	627	146	631	145
450.soplex	8	2002	33.3	1976	33.8	<u>1978</u>	<u>33.7</u>	8	1812	36.8	<u>1785</u>	<u>37.4</u>	1779	37.5
453.povray	8	200	213	200	212	<u>200</u>	<u>213</u>	8	171	248	171	249	<u>171</u>	<u>249</u>
454.calculix	8	<u>520</u>	<u>127</u>	520	127	517	128	8	<u>378</u>	<u>175</u>	373	177	381	173
459.GemsFDTD	8	<u>3448</u>	<u>24.6</u>	3442	24.7	3459	24.5	8	3327	25.5	<u>3327</u>	<u>25.5</u>	3334	25.5
465.tonto	8	<u>645</u>	<u>122</u>	637	124	646	122	8	636	124	625	126	<u>634</u>	<u>124</u>
470.lbm	8	4495	24.5	<u>4439</u>	<u>24.8</u>	4438	24.8	2	777	35.3	<u>774</u>	<u>35.5</u>	771	35.6
481.wrf	8	1714	52.1	1709	52.3	<u>1713</u>	<u>52.2</u>	8	1710	52.3	1714	52.1	<u>1711</u>	<u>52.2</u>
482.sphinx3	8	2835	55.0	<u>2816</u>	<u>55.4</u>	2814	55.4	4	774	101	<u>764</u>	<u>102</u>	764	102

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores

General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, for peak, are compiled in 32-bit mode



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Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib  
-I/opt/intel/fc/10.1.008/include
```

Benchmarks using both Fortran and C:

icc ifort

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  
444.namd: -DSPEC_CPU_LP64  
447.deallI: -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  
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-scalar-rep- -prefetch -opt-malloc-options=3
```

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090714.02.html>



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You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090714.02.xml>

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