



SPEC[®] CFP2006 Result

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NEC Corporation

Express5800/i120Ra-e1
(Intel Xeon L5410)

SPECfp[®]_rate2006 = 38.5

SPECfp_rate_base2006 = 36.0

CPU2006 license: 9006

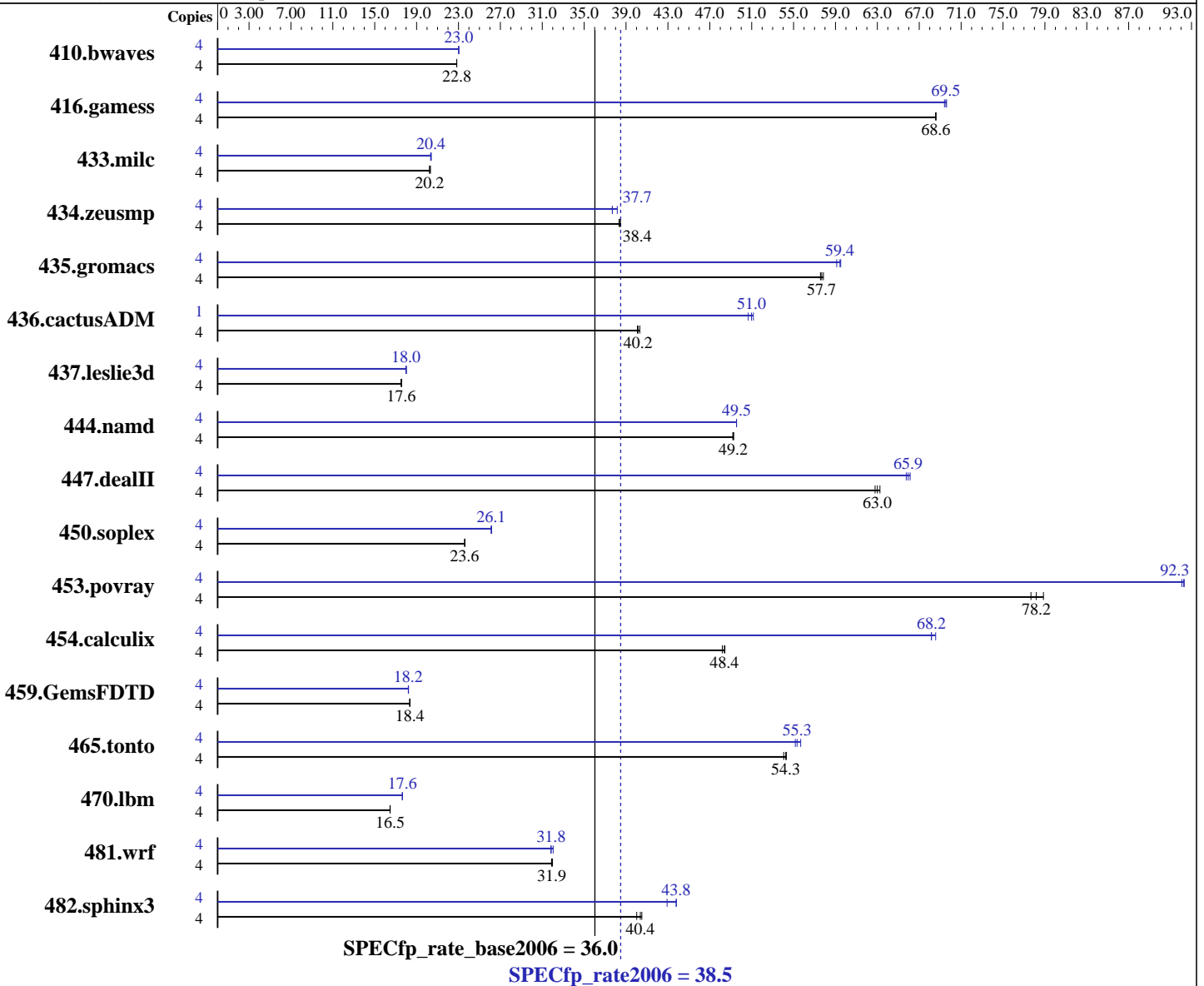
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jun-2008

Hardware Availability: May-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon L5410
 CPU Characteristics: 2.33 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 2333
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 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

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Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler for Linux version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB PC2-5300P, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x80.0 GB SATAII, 7200RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils 2.17

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	2381	22.8	<u>2381</u>	<u>22.8</u>	2380	22.8	4	2362	23.0	<u>2361</u>	<u>23.0</u>	2361	23.0		
416.gamess	4	<u>1142</u>	<u>68.6</u>	1142	68.6	1142	68.6	4	1128	69.4	1125	69.6	<u>1126</u>	<u>69.5</u>		
433.milc	4	1814	20.2	1807	20.3	<u>1813</u>	<u>20.2</u>	4	<u>1802</u>	<u>20.4</u>	1805	20.3	1800	20.4		
434.zeusmp	4	<u>947</u>	<u>38.4</u>	947	38.4	950	38.3	4	<u>966</u>	<u>37.7</u>	954	38.2	966	37.7		
435.gromacs	4	<u>495</u>	<u>57.7</u>	494	57.8	496	57.6	4	<u>481</u>	<u>59.4</u>	480	59.5	483	59.1		
436.cactusADM	4	<u>1190</u>	<u>40.2</u>	1193	40.1	1186	40.3	1	236	50.7	234	51.2	<u>234</u>	<u>51.0</u>		
437.leslie3d	4	2140	17.6	2148	17.5	<u>2142</u>	<u>17.6</u>	4	<u>2091</u>	<u>18.0</u>	2085	18.0	2092	18.0		
444.namd	4	652	49.2	651	49.3	<u>651</u>	<u>49.2</u>	4	647	49.5	647	49.6	<u>647</u>	<u>49.5</u>		
447.dealII	4	729	62.8	724	63.2	<u>726</u>	<u>63.0</u>	4	696	65.8	692	66.1	<u>694</u>	<u>65.9</u>		
450.soplex	4	1414	23.6	1413	23.6	<u>1414</u>	<u>23.6</u>	4	1275	26.2	<u>1277</u>	<u>26.1</u>	1277	26.1		
453.povray	4	270	78.9	<u>272</u>	<u>78.2</u>	274	77.7	4	231	92.1	<u>231</u>	<u>92.3</u>	231	92.3		
454.calculix	4	<u>682</u>	<u>48.4</u>	685	48.2	681	48.4	4	481	68.6	484	68.2	<u>484</u>	<u>68.2</u>		
459.GemsFDTD	4	2314	18.3	<u>2313</u>	<u>18.4</u>	2311	18.4	4	<u>2330</u>	<u>18.2</u>	2328	18.2	2331	18.2		
465.tonto	4	725	54.3	728	54.1	<u>725</u>	<u>54.3</u>	4	<u>711</u>	<u>55.3</u>	707	55.7	714	55.2		
470.lbm	4	3339	16.5	<u>3336</u>	<u>16.5</u>	3336	16.5	4	3115	17.6	<u>3114</u>	<u>17.6</u>	3114	17.6		
481.wrf	4	<u>1400</u>	<u>31.9</u>	1401	31.9	1397	32.0	4	<u>1403</u>	<u>31.8</u>	1394	32.0	1404	31.8		
482.sphinx3	4	<u>1931</u>	<u>40.4</u>	1924	40.5	1948	40.0	4	1780	43.8	1816	42.9	<u>1781</u>	<u>43.8</u>		

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
except for 436.cactusADM at peak.
OMP_NUM_THREADS set to number of cores

Platform Notes

Bios settings:
Hardware Prefetcher: Disabled
Adjacent Cache Line Prefetch: Disabled
Intel SpeedStep Technology: Disabled



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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

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

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Base Optimization Flags (Continued)

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

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.dealII: -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
```



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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

482.sphinx3: -fast -unroll2

C++ benchmarks:

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

447.dealII: -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

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Peak Optimization Flags (Continued)

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.html>

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.xml>

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