



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

Express5800/120Bb-6  
(Intel Xeon 5148 LV)

SPECfp<sup>®</sup>\_rate2006 = 42.0

SPECfp\_rate\_base2006 = 38.8

CPU2006 license: 9006

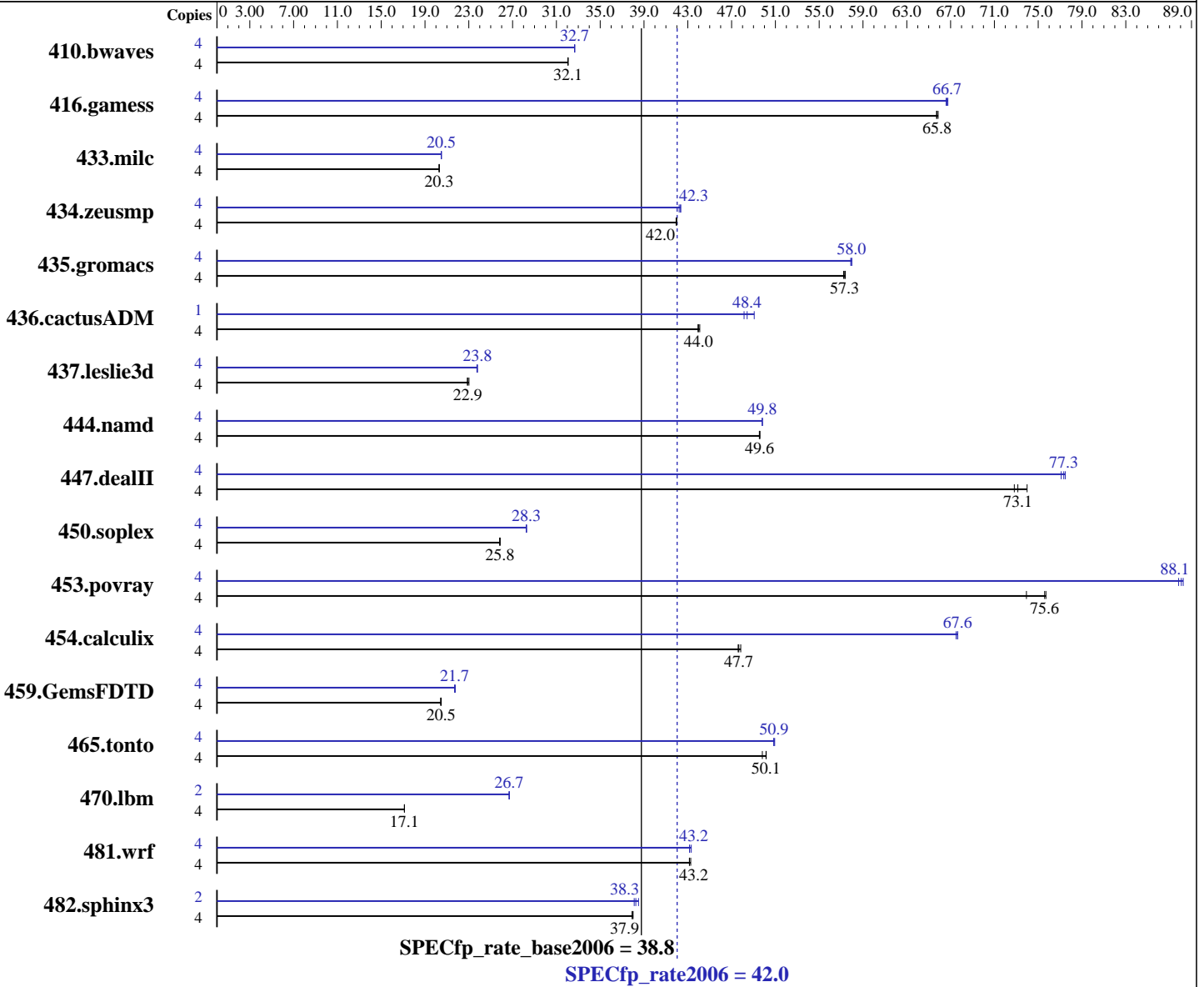
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2008

Hardware Availability: May-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon 5148 LV  
 CPU Characteristics: 2.33 GHz, 4 MB L2, 1333 MHz bus  
 CPU MHz: 2333  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 4 MB I+D on chip per chip

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### 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: 8 GB (4x2 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	4	1695	32.1	<b>1696</b>	<b>32.1</b>	1696	32.1	4	<b>1664</b>	<b>32.7</b>	1664	32.7	1664	32.7
416.gamess	4	<b>1191</b>	<b>65.8</b>	1189	65.9	1192	65.7	4	1176	66.6	1173	66.8	<b>1175</b>	<b>66.7</b>
433.milc	4	<b>1809</b>	<b>20.3</b>	1809	20.3	1809	20.3	4	1791	20.5	<b>1792</b>	<b>20.5</b>	1793	20.5
434.zeusmp	4	867	42.0	868	41.9	<b>868</b>	<b>42.0</b>	4	<b>860</b>	<b>42.3</b>	862	42.2	859	42.4
435.gromacs	4	499	57.2	<b>498</b>	<b>57.3</b>	498	57.4	4	<b>493</b>	<b>58.0</b>	493	57.9	493	58.0
436.cactusADM	4	1088	43.9	<b>1087</b>	<b>44.0</b>	1084	44.1	1	244	49.1	<b>247</b>	<b>48.4</b>	248	48.1
437.leslie3d	4	1634	23.0	<b>1642</b>	<b>22.9</b>	1644	22.9	4	1584	23.7	<b>1581</b>	<b>23.8</b>	1581	23.8
444.namd	4	647	49.6	<b>647</b>	<b>49.6</b>	648	49.5	4	<b>644</b>	<b>49.8</b>	644	49.8	644	49.8
447.dealII	4	618	74.0	<b>626</b>	<b>73.1</b>	628	72.8	4	594	77.1	<b>592</b>	<b>77.3</b>	591	77.5
450.soplex	4	<b>1291</b>	<b>25.8</b>	1292	25.8	1290	25.9	4	1180	28.3	<b>1181</b>	<b>28.3</b>	1181	28.2
453.povray	4	281	75.7	<b>282</b>	<b>75.6</b>	288	73.9	4	242	87.8	241	88.2	<b>242</b>	<b>88.1</b>
454.calculix	4	<b>692</b>	<b>47.7</b>	690	47.8	693	47.6	4	489	67.5	488	67.6	<b>488</b>	<b>67.6</b>
459.GemsFDTD	4	2072	20.5	2078	20.4	<b>2075</b>	<b>20.5</b>	4	<b>1954</b>	<b>21.7</b>	1955	21.7	1950	21.8
465.tonto	4	790	49.8	785	50.2	<b>785</b>	<b>50.1</b>	4	773	50.9	<b>774</b>	<b>50.9</b>	774	50.8
470.lbm	4	3210	17.1	3210	17.1	<b>3210</b>	<b>17.1</b>	2	<b>1030</b>	<b>26.7</b>	1030	26.7	1029	26.7
481.wrf	4	1036	43.1	1033	43.3	<b>1035</b>	<b>43.2</b>	4	1035	43.2	1031	43.3	<b>1035</b>	<b>43.2</b>
482.sphinx3	4	<b>2055</b>	<b>37.9</b>	2056	37.9	2051	38.0	2	<b>1019</b>	<b>38.3</b>	1023	38.1	1012	38.5

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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**Test date:** Feb-2008

**Hardware Availability:** May-2007

**Software Availability:** Nov-2007

## 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.20090713.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.20090713.xml>

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