



# SPEC® CFP2006 Result

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## NEC Corporation

Express5800/i120Rg-1  
(Intel Xeon processor LV 5148)

SPECfp®\_rate2006 = 39.1

SPECfp\_rate\_base2006 = 37.9

CPU2006 license: 9006

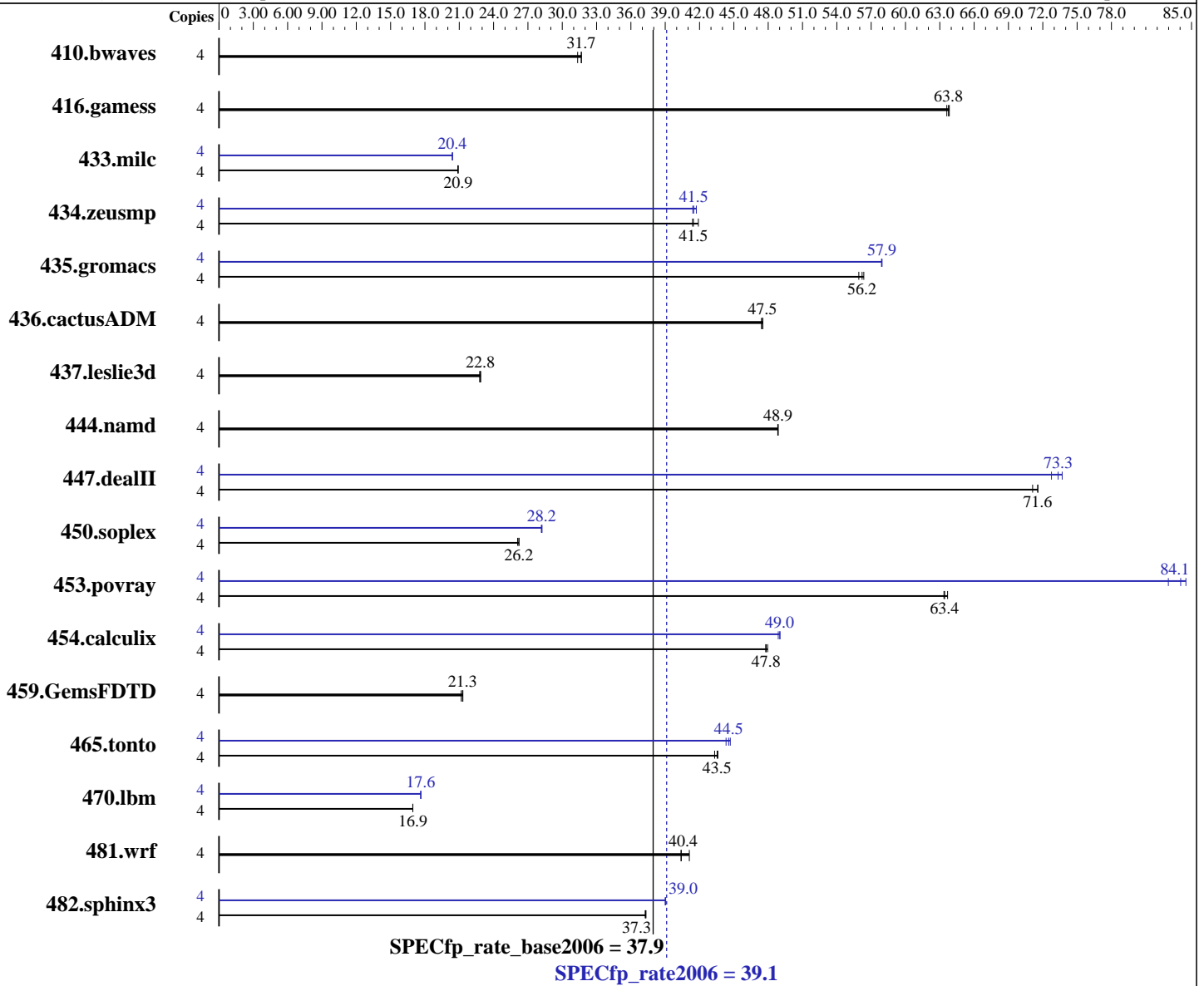
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2007

Hardware Availability: May-2007

Software Availability: Apr-2007



### Hardware

CPU Name: Intel Xeon 5148 LV  
 CPU Characteristics: 2.33 GHz, 4MB L2, 1333MHz 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: 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp for x86\_64  
 Compiler: Intel C++ Compiler for IA32/EM64T application, Version 9.1 - Build 20070320, Package-ID: l\_cc\_c\_9.1.049  
 Intel Fortran Compiler for IA32/EM64T application, Version 9.1 - Build 20070320, Package ID: l\_fc\_c\_9.1.045  
 Auto Parallel: No  
 File System: ext2

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L3 Cache: None  
Other Cache: None  
Memory: 8 GB (4x2 GB DDR2 5300F, 2 rank, CL5-5-5, ECC)  
Disk Subsystem: 1x73.2 GB SAS, 15000RPM  
Other Hardware: None

System State: Multiuser, Runlevel 3  
Base Pointers: 64-bit  
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    | 4      | 1716        | 31.7        | 1734        | 31.3        | <b>1717</b> | <b>31.7</b> | 4      | 1716        | 31.7        | 1734        | 31.3        | <b>1717</b> | <b>31.7</b> |
| 416.gamess    | 4      | 1227        | 63.8        | <b>1228</b> | <b>63.8</b> | 1231        | 63.6        | 4      | 1227        | 63.8        | <b>1228</b> | <b>63.8</b> | 1231        | 63.6        |
| 433.milc      | 4      | 1758        | 20.9        | 1757        | 20.9        | <b>1758</b> | <b>20.9</b> | 4      | 1800        | 20.4        | <b>1800</b> | <b>20.4</b> | 1799        | 20.4        |
| 434.zeusmp    | 4      | 879         | 41.4        | 869         | 41.9        | <b>878</b>  | <b>41.5</b> | 4      | 872         | 41.7        | <b>877</b>  | <b>41.5</b> | 879         | 41.4        |
| 435.gromacs   | 4      | 511         | 55.9        | <b>508</b>  | <b>56.2</b> | 507         | 56.4        | 4      | 493         | 58.0        | 493         | 57.9        | <b>493</b>  | <b>57.9</b> |
| 436.cactusADM | 4      | 1006        | 47.5        | <b>1006</b> | <b>47.5</b> | 1008        | 47.4        | 4      | 1006        | 47.5        | <b>1006</b> | <b>47.5</b> | 1008        | 47.4        |
| 437.leslie3d  | 4      | 1644        | 22.9        | 1650        | 22.8        | <b>1646</b> | <b>22.8</b> | 4      | 1644        | 22.9        | 1650        | 22.8        | <b>1646</b> | <b>22.8</b> |
| 444.namd      | 4      | 657         | 48.8        | 656         | 48.9        | <b>657</b>  | <b>48.9</b> | 4      | 657         | 48.8        | 656         | 48.9        | <b>657</b>  | <b>48.9</b> |
| 447.dealII    | 4      | 644         | 71.1        | <b>639</b>  | <b>71.6</b> | 639         | 71.6        | 4      | 629         | 72.8        | 621         | 73.7        | <b>624</b>  | <b>73.3</b> |
| 450.soplex    | 4      | 1278        | 26.1        | 1273        | 26.2        | <b>1273</b> | <b>26.2</b> | 4      | <b>1183</b> | <b>28.2</b> | 1184        | 28.2        | 1182        | 28.2        |
| 453.povray    | 4      | <b>336</b>  | <b>63.4</b> | 336         | 63.4        | 334         | 63.7        | 4      | <b>253</b>  | <b>84.1</b> | 256         | 83.0        | 252         | 84.5        |
| 454.calculix  | 4      | <b>690</b>  | <b>47.8</b> | 688         | 48.0        | 691         | 47.8        | 4      | 673         | 49.0        | 675         | 48.9        | <b>673</b>  | <b>49.0</b> |
| 459.GemsFDTD  | 4      | <b>1994</b> | <b>21.3</b> | 2004        | 21.2        | 1991        | 21.3        | 4      | <b>1994</b> | <b>21.3</b> | 2004        | 21.2        | 1991        | 21.3        |
| 465.tonto     | 4      | 903         | 43.6        | 909         | 43.3        | <b>904</b>  | <b>43.5</b> | 4      | <b>884</b>  | <b>44.5</b> | 888         | 44.3        | 881         | 44.7        |
| 470.lbm       | 4      | 3245        | 16.9        | 3244        | 16.9        | <b>3244</b> | <b>16.9</b> | 4      | <b>3115</b> | <b>17.6</b> | 3117        | 17.6        | 3115        | 17.6        |
| 481.wrf       | 4      | <b>1106</b> | <b>40.4</b> | 1087        | 41.1        | 1107        | 40.4        | 4      | <b>1106</b> | <b>40.4</b> | 1087        | 41.1        | 1107        | 40.4        |
| 482.sphinx3   | 4      | <b>2091</b> | <b>37.3</b> | 2093        | 37.2        | 2089        | 37.3        | 4      | 1999        | 39.0        | <b>1998</b> | <b>39.0</b> | 1997        | 39.0        |

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

## General Notes

The system bus runs at 1333 MHz  
All binaries were built with 64-bit Intel compiler except:  
433.milc, 434.zeusmp, 450.soplex, 470.lbm and 482.sphinx3 in peak were built with  
32-bit Intel compiler by changing the path for include and library files.



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**Test sponsor:** NEC Corporation

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**Test date:** Jul-2007

**Hardware Availability:** May-2007

**Software Availability:** Apr-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:

```
/opt/intel/cc/9.1.049/bin/icc -I/opt/intel/cc/9.1.049/include
-L/opt/intel/cc/9.1.049/lib
```

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/9.1.049/bin/icpc
-I/opt/intel/cc/9.1.049/include -L/opt/intel/cc/9.1.049/lib
```

Fortran benchmarks (except as noted below):

ifort

```
434.zeusmp: /opt/intel/fc/9.1.045/bin/ifort
-I/opt/intel/fc/9.1.045/include -L/opt/intel/fc/9.1.045/lib
```

Benchmarks using both Fortran and C:

icc ifort

## Peak Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64
416.gamess: -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
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
```

```
470.lbm: Same as 433.milc
```

```
482.sphinx3: -fast
```

C++ benchmarks:

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## Peak Optimization Flags (Continued)

444.namd: basepeak = yes

447.dealII: -prof\_gen(pass 1) -prof\_use(pass 2) -fast

450.soplex: Same as 447.dealII

453.povray: Same as 447.dealII

### Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: basepeak = yes

434.zeusmp: -fast

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -prof\_gen(pass 1) -prof\_use(pass 2) -fast

### Benchmarks using both Fortran and C:

435.gromacs: -prof\_gen(pass 1) -prof\_use(pass 2) -fast

436.cactusADM: basepeak = yes

454.calculix: Same as 435.gromacs

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/NEC-ic91-linux-flags.html>

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

<http://www.spec.org/cpu2006/flags/NEC-ic91-linux-flags.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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