# SPEC® CFP2006 Result

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## NEC Corporation

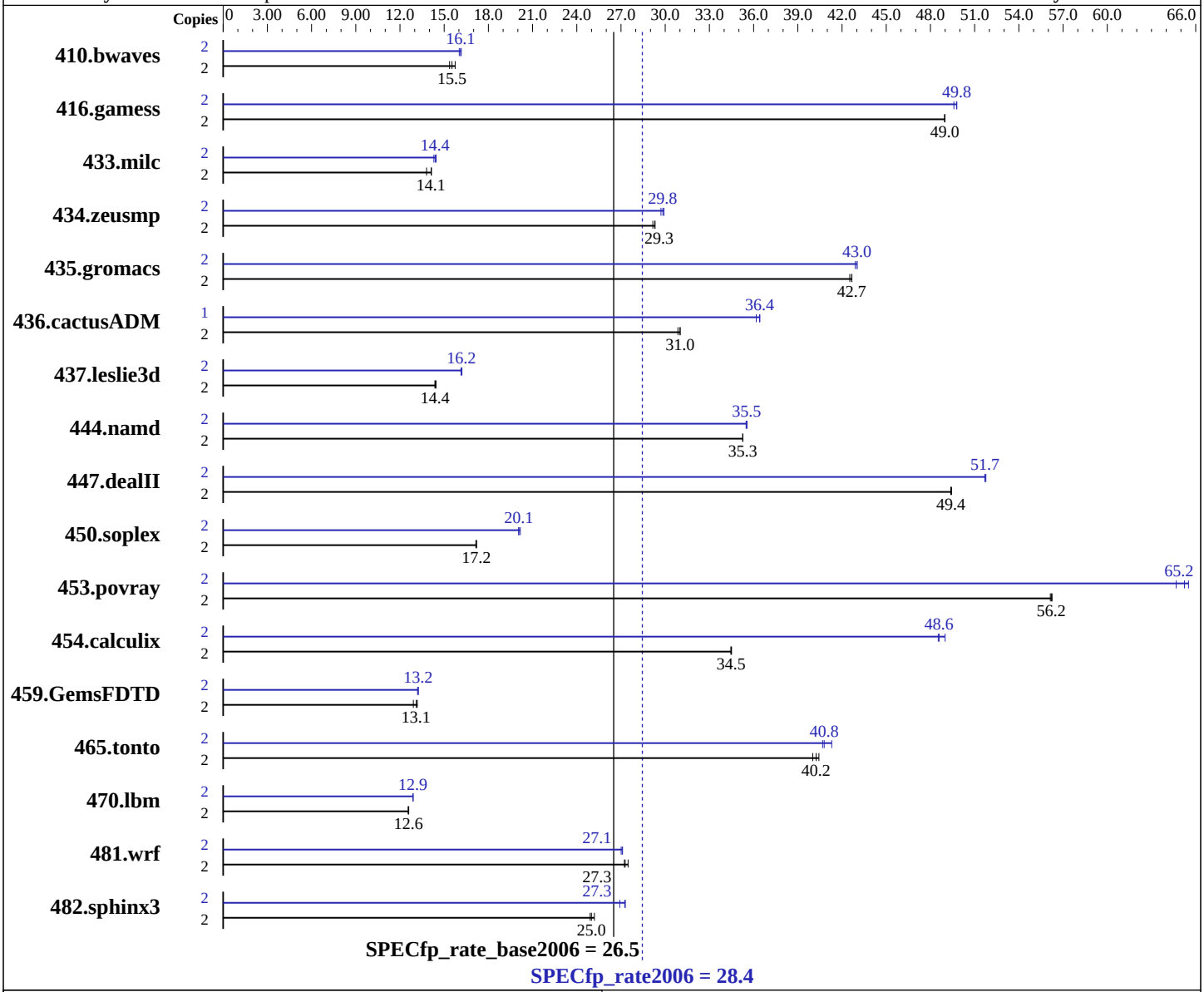
Express5800/120Bb-6
(Intel Xeon X5260)

**SPECfp®_rate2006 = 28.4**

**SPECfp_rate_base2006 = 26.5**

**CPU2006 license:** 9006
**Test sponsor:** NEC Corporation
**Tested by:** NEC Corporation

**Test date:** May-2008
**Hardware Availability:** Feb-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5260 |
| CPU Characteristics: | 3.33 GHz, 6 MB L2, 1333 MHz bus |
| CPU MHz: | 3333 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 6 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-smp |
| 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: | ReiserFS |

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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, 15000RPM
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 | 2 | 1769 | 15.4 | **1750** | **15.5** | 1726 | 15.7 | 2 | **1687** | **16.1** | 1696 | 16.0 | 1682 | 16.2 |
| 416.gamess | 2 | 800 | 49.0 | 799 | 49.0 | **799** | **49.0** | 2 | 790 | 49.6 | **787** | **49.8** | 787 | 49.8 |
| 433.milc | 2 | 1330 | 13.8 | 1299 | 14.1 | **1301** | **14.1** | 2 | 1270 | 14.5 | 1284 | 14.3 | **1276** | **14.4** |
| 434.zeusmp | 2 | 621 | 29.3 | 624 | 29.2 | **621** | **29.3** | 2 | 608 | 29.9 | 613 | 29.7 | **610** | **29.8** |
| 435.gromacs | 2 | **335** | **42.7** | 335 | 42.7 | 336 | 42.5 | 2 | 332 | 43.0 | 333 | 42.9 | **332** | **43.0** |
| 436.cactusADM | 2 | 771 | 31.0 | 774 | 30.9 | **771** | **31.0** | 1 | **328** | **36.4** | 330 | 36.2 | 328 | 36.4 |
| 437.leslie3d | 2 | 1308 | 14.4 | **1306** | **14.4** | 1301 | 14.4 | 2 | 1160 | 16.2 | **1162** | **16.2** | 1165 | 16.1 |
| 444.namd | 2 | 455 | 35.3 | **455** | **35.3** | 455 | 35.3 | 2 | 451 | 35.6 | **452** | **35.5** | 452 | 35.5 |
| 447.dealII | 2 | 463 | 49.4 | **463** | **49.4** | 463 | 49.4 | 2 | **442** | **51.7** | 442 | 51.8 | 443 | 51.7 |
| 450.soplex | 2 | **970** | **17.2** | 970 | 17.2 | 973 | 17.2 | 2 | **831** | **20.1** | 832 | 20.1 | 827 | 20.2 |
| 453.povray | 2 | 190 | 56.1 | 189 | 56.3 | **189** | **56.2** | 2 | 162 | 65.5 | 165 | 64.7 | **163** | **65.2** |
| 454.calculix | 2 | 478 | 34.5 | 479 | 34.5 | **479** | **34.5** | 2 | 340 | 48.5 | 337 | 49.0 | **340** | **48.6** |
| 459.GemsFDTD | 2 | 1644 | 12.9 | **1620** | **13.1** | 1610 | 13.2 | 2 | 1608 | 13.2 | **1603** | **13.2** | 1602 | 13.2 |
| 465.tonto | 2 | 487 | 40.4 | 492 | 40.0 | **489** | **40.2** | 2 | 477 | 41.3 | 484 | 40.7 | **482** | **40.8** |
| 470.lbm | 2 | 2182 | 12.6 | **2185** | **12.6** | 2189 | 12.6 | 2 | **2133** | **12.9** | 2134 | 12.9 | 2131 | 12.9 |
| 481.wrf | 2 | 813 | 27.5 | **819** | **27.3** | 820 | 27.2 | 2 | **825** | **27.1** | 824 | 27.1 | 827 | 27.0 |
| 482.sphinx3 | 2 | **1560** | **25.0** | 1547 | 25.2 | 1565 | 24.9 | 2 | 1448 | 26.9 | 1428 | 27.3 | **1430** | **27.3** |

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
```

## 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

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`

## 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`

Continued on next page

# 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.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

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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For other inquiries, please contact webmaster@spec.org.

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