# SPEC® CFP2006 Result

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## NEC Corporation

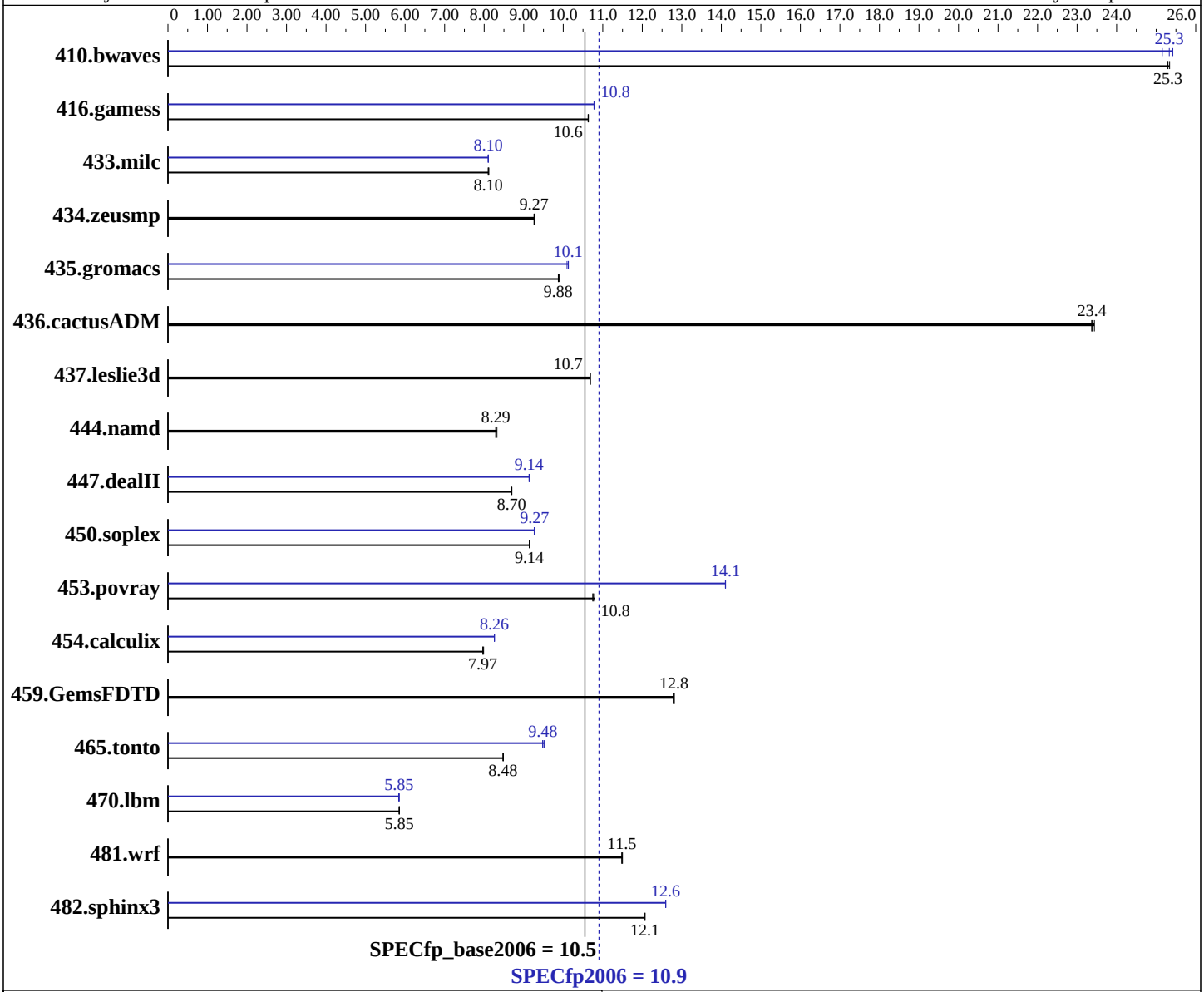
Express5800/120Rg-1
(Intel Xeon processor 5110)

SPECfp®2006 = 10.9

SPECfp_base2006 = 10.5

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

**Test date:** Jun-2007
**Hardware Availability:** May-2007
**Software Availability:** Apr-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon 5110 |
| CPU Characteristics: | 1.60 GHz, 4MB L2, 1066MHz bus |
| CPU MHz: | 1600 |
| 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: | Windows Server 2003, Standard x64 Edition |
| Compiler: | Intel C++ Compiler for EM64T version 9.1 Build 20070109, Package-ID W_CC_C_9.1.034<br>Intel Fortran Compiler for EM64T version 9.1 Build 20070109, Package-ID W_FC_C_9.1.034<br>Microsoft Visual Studio 2005 (libr. & linker) |
| Auto Parallel: | Yes |
| File System: | NTFS |
| System State: | Default |

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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

Base Pointers: 64-bit
Peak Pointers: 64-bit
Other Software: MicroQuill SmartHeap Library 8.1

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 537 | 25.3 | 536 | 25.3 | **537** | **25.3** | **536** | **25.3** | 535 | 25.4 | 540 | 25.2 |
| 416.gamess | 1841 | 10.6 | 1842 | 10.6 | **1842** | **10.6** | **1816** | **10.8** | 1817 | 10.8 | 1815 | 10.8 |
| 433.milc | 1131 | 8.12 | **1133** | **8.10** | 1133 | 8.10 | 1133 | 8.10 | **1133** | **8.10** | 1133 | 8.10 |
| 434.zeusmp | 980 | 9.28 | 983 | 9.26 | **982** | **9.27** | 980 | 9.28 | 983 | 9.26 | **982** | **9.27** |
| 435.gromacs | **723** | **9.88** | 721 | 9.90 | 723 | 9.88 | 705 | 10.1 | 707 | 10.1 | **705** | **10.1** |
| 436.cactusADM | 511 | 23.4 | 510 | 23.4 | **511** | **23.4** | 511 | 23.4 | 510 | 23.4 | **511** | **23.4** |
| 437.leslie3d | 880 | 10.7 | **880** | **10.7** | 880 | 10.7 | 880 | 10.7 | **880** | **10.7** | 880 | 10.7 |
| 444.namd | **967** | **8.29** | 964 | 8.32 | 967 | 8.29 | **967** | **8.29** | 964 | 8.32 | 967 | 8.29 |
| 447.dealII | 1316 | 8.70 | **1315** | **8.70** | 1315 | 8.70 | 1252 | 9.14 | 1252 | 9.14 | **1252** | **9.14** |
| 450.soplex | 912 | 9.14 | **912** | **9.14** | 911 | 9.15 | 900 | 9.27 | **899** | **9.27** | 899 | 9.27 |
| 453.povray | **495** | **10.8** | 493 | 10.8 | 495 | 10.7 | **377** | **14.1** | 377 | 14.1 | 377 | 14.1 |
| 454.calculix | **1035** | **7.97** | 1033 | 7.99 | 1036 | 7.97 | 999 | 8.26 | 999 | 8.26 | **999** | **8.26** |
| 459.GemsFDTD | **828** | **12.8** | 830 | 12.8 | 828 | 12.8 | **828** | **12.8** | 830 | 12.8 | 828 | 12.8 |
| 465.tonto | 1161 | 8.48 | 1160 | 8.49 | **1161** | **8.48** | 1034 | 9.52 | **1038** | **9.48** | 1038 | 9.48 |
| 470.lbm | 2346 | 5.86 | **2347** | **5.85** | 2350 | 5.85 | 2354 | 5.84 | **2349** | **5.85** | 2349 | 5.85 |
| 481.wrf | 971 | 11.5 | 973 | 11.5 | **973** | **11.5** | 971 | 11.5 | 973 | 11.5 | **973** | **11.5** |
| 482.sphinx3 | **1615** | **12.1** | 1615 | 12.1 | 1618 | 12.0 | 1548 | 12.6 | **1548** | **12.6** | 1548 | 12.6 |

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

## General Notes

```
The Express5800/120Rg-1 and the Express5800/120Ri-2 models are
electronically equivalent.
The results have been measured on a Express5800/120Ri-2 model.
```

## Base Compiler Invocation

C benchmarks:

```
icl -Qvc8 -Qc99
```

C++ benchmarks:

```
icl -Qvc8
```

Continued on next page

## Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc8 -Qc99 ifort

## Base Portability Flags

410.bwaves: -DSPEC_CPU_P64
416.gamess: -DSPEC_CPU_P64
433.milc: -D_Complex= -DSPEC_CPU_P64
434.zeusmp: -DSPEC_CPU_P64
435.gromacs: -D_Complex= -DSPEC_CPU_P64
436.cactusADM: -D_Complex= -DSPEC_CPU_P64 -Qlowercase /assume:underscore
437.leslie3d: -DSPEC_CPU_P64
444.namd: -DSPEC_CPU_P64 /TP
447.dealII: -D_Complex= -DSPEC_CPU_P64 -DBOOST_NO_INTRINSIC_WCHAR_T -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
450.soplex: -DSPEC_CPU_P64
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
454.calculix: -D_Complex= -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -Qlowercase
459.GemsFDTD: -DSPEC_CPU_P64
465.tonto: -DSPEC_CPU_P64
470.lbm: -D_Complex= -DSPEC_CPU_P64
481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
482.sphinx3: -D_Complex= -DSPEC_CPU_P64

## Base Optimization Flags

C benchmarks:
-fast -Qparallel -F950000000 shlW32M.lib

C++ benchmarks:
-fast -Qparallel -Qcxx-features -F950000000 shlW32M.lib

Fortran benchmarks:
-fast -Qparallel -F950000000 shlW32M.lib

Benchmarks using both Fortran and C:
-fast -Qparallel -F950000000 shlW32M.lib

## Peak Compiler Invocation

C benchmarks:
`icl -Qvc8 -Qc99`

C++ benchmarks:
`icl -Qvc8`

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`icl -Qvc8 -Qc99 ifort`

## Peak Portability Flags

`Same as Base Portability Flags`

## Peak Optimization Flags

C benchmarks:
`-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-fast -F950000000 shlW32M.lib`

C++ benchmarks:

444.namd: `basepeak = yes`

447.dealII: `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-fast -Qcxx-features -F950000000 shlW32M.lib`

450.soplex: `Same as 447.dealII`

453.povray: `Same as 447.dealII`

Fortran benchmarks:

410.bwaves: `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-fast -Qparallel -F950000000 shlW32M.lib`

416.gamess: `-fast -F950000000 shlW32M.lib`

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `basepeak = yes`

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# Peak Optimization Flags (Continued)

465.tonto: `Same as 410.bwaves`

Benchmarks using both Fortran and C:

435.gromacs: `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-fast -F950000000 shlW32M.lib`

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-cpu2006-ic91-flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-cpu2006-ic91-flags.xml`


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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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