SPEC® CFP2006 Result

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NEC Corporation

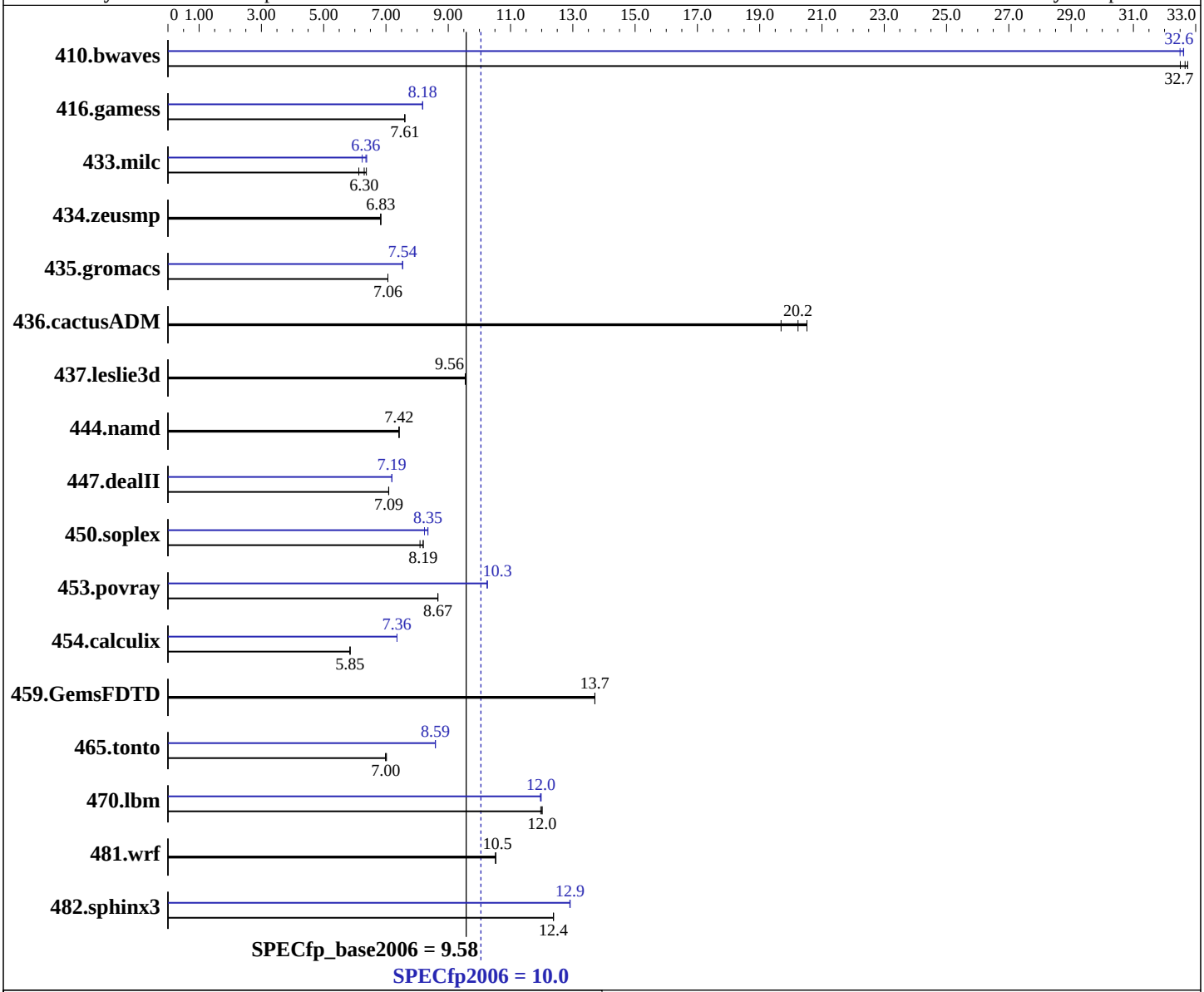
Express5800/140Hf
(Intel Xeon processor 7110M)

SPECfp®2006 = 10.0

SPECfp_base2006 = 9.58

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

Test date: Nov-2007
Hardware Availability: Oct-2006
Software Availability: Apr-2007



Hardware

CPU Name:	Intel Xeon 7110M
CPU Characteristics:	2.60 GHz, 800 MHz bus
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,4 chips
Primary Cache:	12 K micro-ops I + 16 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core

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Software

Operating System:	Windows Server 2003 Enterprise x64 Edition Service Pack1
Compiler:	Intel C++ Compiler for EM64T version 9.1 Build 20070322, Package-ID W_CC_C_9.1.037 Intel Fortran Compiler for EM64T version 9.1 Build 20070322, Package-ID W_FC_C_9.1.037 Microsoft Visual Studio 2005 (libr. & linker)
Auto Parallel:	Yes
File System:	NTFS

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (16x2 GB PC2-3200R, 2 rank, CL3-3-3, ECC)
Disk Subsystem: 1x146.5 GB SAS, 15000RPM
Other Hardware: None

System State: Default
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	**416**	**32.7**	415	32.7	418	32.5	**417**	**32.6**	418	32.5	417	32.6
416.gamess	2576	7.60	**2574**	**7.61**	2574	7.61	2394	8.18	**2394**	**8.18**	2394	8.18
433.milc	1441	6.37	**1457**	**6.30**	1498	6.13	**1444**	**6.36**	1472	6.24	1438	6.38
434.zeusmp	1332	6.83	1332	6.83	**1332**	**6.83**	1332	6.83	1332	6.83	**1332**	**6.83**
435.gromacs	1011	7.06	1011	7.06	**1011**	**7.06**	**947**	**7.54**	947	7.54	948	7.54
436.cactusADM	**591**	**20.2**	607	19.7	582	20.5	**591**	**20.2**	607	19.7	582	20.5
437.leslie3d	**983**	**9.56**	983	9.56	985	9.55	**983**	**9.56**	983	9.56	985	9.55
444.namd	1081	7.42	**1081**	**7.42**	1081	7.42	1081	7.42	**1081**	**7.42**	1081	7.42
447.dealII	1615	7.08	**1614**	**7.09**	1614	7.09	1591	7.19	**1591**	**7.19**	1591	7.19
450.soplex	1030	8.09	1018	8.20	**1018**	**8.19**	1012	8.24	999	8.35	**999**	**8.35**
453.povray	614	8.67	614	8.67	**614**	**8.67**	519	10.3	**519**	**10.3**	519	10.2
454.calculix	1412	5.84	**1411**	**5.85**	1410	5.85	1122	7.36	1122	7.35	**1122**	**7.36**
459.GemsFDTD	**774**	**13.7**	774	13.7	774	13.7	**774**	**13.7**	774	13.7	774	13.7
465.tonto	**1406**	**7.00**	1402	7.02	1409	6.98	1146	8.58	**1146**	**8.59**	1146	8.59
470.lbm	1148	12.0	**1144**	**12.0**	1144	12.0	1149	12.0	1147	12.0	**1147**	**12.0**
481.wrf	1062	10.5	1061	10.5	**1062**	**10.5**	1062	10.5	1061	10.5	**1062**	**10.5**
482.sphinx3	**1575**	**12.4**	1574	12.4	1575	12.4	1510	12.9	**1510**	**12.9**	1509	12.9

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

General Notes

```
The system bus runs at 800 MHz
All binaries were built with 64-bit Intel compiler.

The Express5800/140Hf and the Express5800/140Re-4 models are
electronically equivalent.
The results have been measured on a Express5800/140Re-4 model.
```

Base Compiler Invocation

C benchmarks:

```
icl -Qvc8 -Qc99
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
icl -Qvc8

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
-link -FORCE:MULTIPLE

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

Fortran benchmarks:
-fast -Qparallel -F950000000 shlW32M.lib
-link -FORCE:MULTIPLE

Continued on next page

Base Optimization Flags (Continued)

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

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
-link -FORCE:MULTIPLE

C++ benchmarks:

444.namd: basepeak = yes

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

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 -link -FORCE:MULTIPLE

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Peak Optimization Flags (Continued)

416.gamess: `-fast -F950000000 shlW32M.lib -link -FORCE:MULTIPLE`

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `basepeak = yes`

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 -link -FORCE:MULTIPLE`

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-FP-win-flags.html`

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

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

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