SPEC® CFP2006 Result

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NEC Corporation

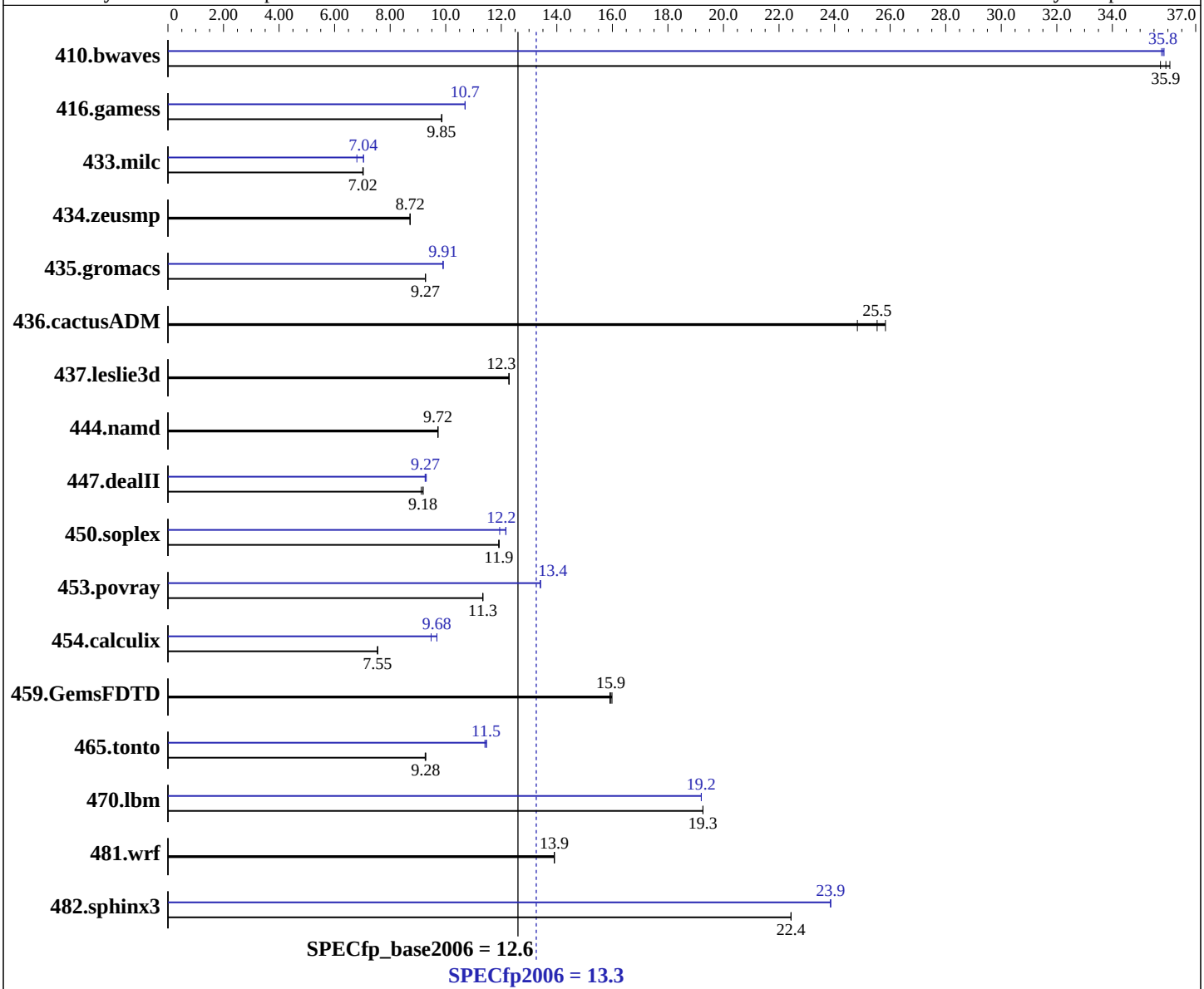
Express5800/140Hf
(Intel Xeon processor 7140M)

SPECfp®2006 = 13.3

SPECfp_base2006 = 12.6

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

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



Hardware

CPU Name:	Intel Xeon 7140M
CPU Characteristics:	3.40 GHz, 800MHz bus
CPU MHz:	3400
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: 16 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	380	35.7	**378**	**35.9**	377	36.1	379	35.9	380	35.8	**379**	**35.8**
416.gamess	1987	9.85	1985	9.86	**1987**	**9.85**	1830	10.7	**1830**	**10.7**	1830	10.7
433.milc	1305	7.03	**1308**	**7.02**	1308	7.02	1350	6.80	**1304**	**7.04**	1304	7.04
434.zeusmp	**1044**	**8.72**	1044	8.72	1043	8.72	**1044**	**8.72**	1044	8.72	1043	8.72
435.gromacs	**770**	**9.27**	770	9.27	770	9.27	721	9.90	721	9.91	**721**	**9.91**
436.cactusADM	**468**	**25.5**	463	25.8	481	24.8	**468**	**25.5**	463	25.8	481	24.8
437.leslie3d	766	12.3	765	12.3	**765**	**12.3**	766	12.3	765	12.3	**765**	**12.3**
444.namd	825	9.72	825	9.72	**825**	**9.72**	825	9.72	825	9.72	**825**	**9.72**
447.dealII	1246	9.18	**1246**	**9.18**	1255	9.12	1230	9.30	1236	9.26	**1234**	**9.27**
450.soplex	699	11.9	**700**	**11.9**	700	11.9	**686**	**12.2**	698	11.9	685	12.2
453.povray	469	11.3	469	11.3	**469**	**11.3**	397	13.4	**397**	**13.4**	397	13.4
454.calculix	**1093**	**7.55**	1094	7.54	1092	7.55	852	9.68	871	9.47	**852**	**9.68**
459.GemsFDTD	667	15.9	**665**	**15.9**	664	16.0	667	15.9	**665**	**15.9**	664	16.0
465.tonto	1061	9.28	1063	9.26	**1061**	**9.28**	**859**	**11.5**	862	11.4	858	11.5
470.lbm	**713**	**19.3**	713	19.3	713	19.3	716	19.2	**716**	**19.2**	716	19.2
481.wrf	**803**	**13.9**	803	13.9	803	13.9	**803**	**13.9**	803	13.9	803	13.9
482.sphinx3	869	22.4	**869**	**22.4**	869	22.4	**817**	**23.9**	817	23.9	817	23.9

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

General Notes

```
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
```

C++ benchmarks:

```
icl -Qvc8
```

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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
-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

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

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

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Peak Optimization Flags (Continued)

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.20090714.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.20090714.xml`

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

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