SPEC® CFP2006 Result
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NEC Corporation

Express5800/140Hf
(Intel Xeon processor 7110M)

$SPECfp^®\_rate2006 =$ 43.9
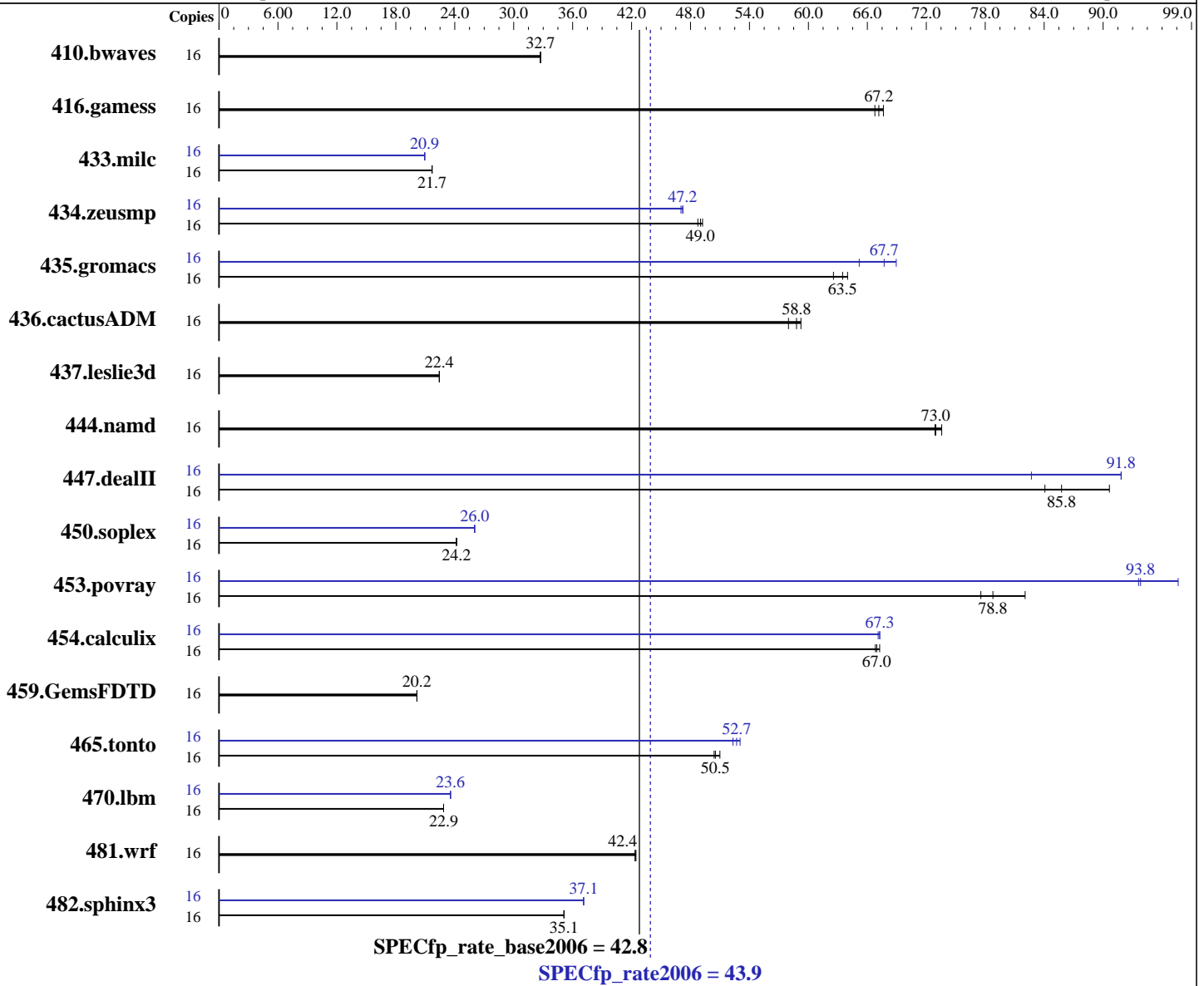
SPECfp_rate_base2006 = 42.8

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

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

Benchmark	Copies	Result
410.bwaves	16	32.7
416.gamess	16	67.2
433.milc	16	20.9
433.milc	16	21.7
434.zeusmp	16	47.2
434.zeusmp	16	49.0
435.gromacs	16	67.7
435.gromacs	16	63.5
436.cactusADM	16	58.8
437.leslie3d	16	22.4
444.namd	16	73.0
447.dealII	16	91.8
447.dealII	16	85.8
450.soplex	16	26.0
450.soplex	16	24.2
453.povray	16	93.8
453.povray	16	78.8
454.calculix	16	67.3
454.calculix	16	67.0
459.GemsFDTD	16	20.2
465.tonto	16	52.7
465.tonto	16	50.5
470.lbm	16	23.6
470.lbm	16	22.9
481.wrf	16	42.4
482.sphinx3	16	37.1
482.sphinx3	16	35.1

SPECfp_rate_base2006 = 42.8
SPECfp_rate2006 = 43.9

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

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64), Kernel 2.6.16.21-0.8-smp
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:	4 MB I+D on chip per chip	System State:	Multiuser, Runlevel 3
Other Cache:	None	Base Pointers:	64-bit
Memory:	32 GB (16x2 GB PC2-3200R, 2 rank, CL3-3-3, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1x146.5 GB SAS, 15000RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	**6643**	**32.7**	6646	32.7	6641	32.7	16	**6643**	**32.7**	6646	32.7	6641	32.7
416.gamess	16	4692	66.8	4632	67.6	**4664**	**67.2**	16	4692	66.8	4632	67.6	**4664**	**67.2**
433.milc	16	6770	21.7	**6770**	**21.7**	6775	21.7	16	7015	20.9	**7014**	**20.9**	7012	20.9
434.zeusmp	16	**2971**	**49.0**	2958	49.2	2987	48.7	16	3084	47.2	3096	47.0	**3084**	**47.2**
435.gromacs	16	1826	62.5	1785	64.0	**1800**	**63.5**	16	1753	65.2	**1687**	**67.7**	1657	68.9
436.cactusADM	16	3298	58.0	**3252**	**58.8**	3228	59.2	16	3298	58.0	**3252**	**58.8**	3228	59.2
437.leslie3d	16	6704	22.4	**6706**	**22.4**	6706	22.4	16	6704	22.4	**6706**	**22.4**	6706	22.4
444.namd	16	**1759**	**73.0**	1760	72.9	1744	73.6	16	**1759**	**73.0**	1760	72.9	1744	73.6
447.dealII	16	2177	84.1	**2134**	**85.8**	2019	90.6	16	1993	91.8	2213	82.7	**1993**	**91.8**
450.soplex	16	**5518**	**24.2**	5523	24.2	5516	24.2	16	5130	26.0	**5127**	**26.0**	5126	26.0
453.povray	16	**1080**	**78.8**	1098	77.6	1037	82.1	16	909	93.6	**907**	**93.8**	872	97.6
454.calculix	16	**1971**	**67.0**	1976	66.8	1963	67.3	16	1967	67.1	**1963**	**67.3**	1962	67.3
459.GemsFDTD	16	8423	20.2	8427	20.1	**8425**	**20.2**	16	8423	20.2	8427	20.1	**8425**	**20.2**
465.tonto	16	3088	51.0	**3115**	**50.5**	3123	50.4	16	2968	53.0	**2988**	**52.7**	3009	52.3
470.lbm	16	**9615**	**22.9**	9616	22.9	9614	22.9	16	**9329**	**23.6**	9330	23.6	9327	23.6
481.wrf	16	4210	42.4	4219	42.4	**4217**	**42.4**	16	4210	42.4	4219	42.4	**4217**	**42.4**
482.sphinx3	16	**8879**	**35.1**	8876	35.1	8882	35.1	16	8400	37.1	**8401**	**37.1**	8405	37.1

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 800 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.

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

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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.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

      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-FP-linux-flags.html

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

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

Tested with SPEC CPU2006 v1.0.
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