



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

Express5800/140Hf  
(Intel Xeon processor 7140M)

SPECfp<sup>®</sup>\_rate2006 = 60.2

SPECfp\_rate\_base2006 = 58.8

CPU2006 license: 9006

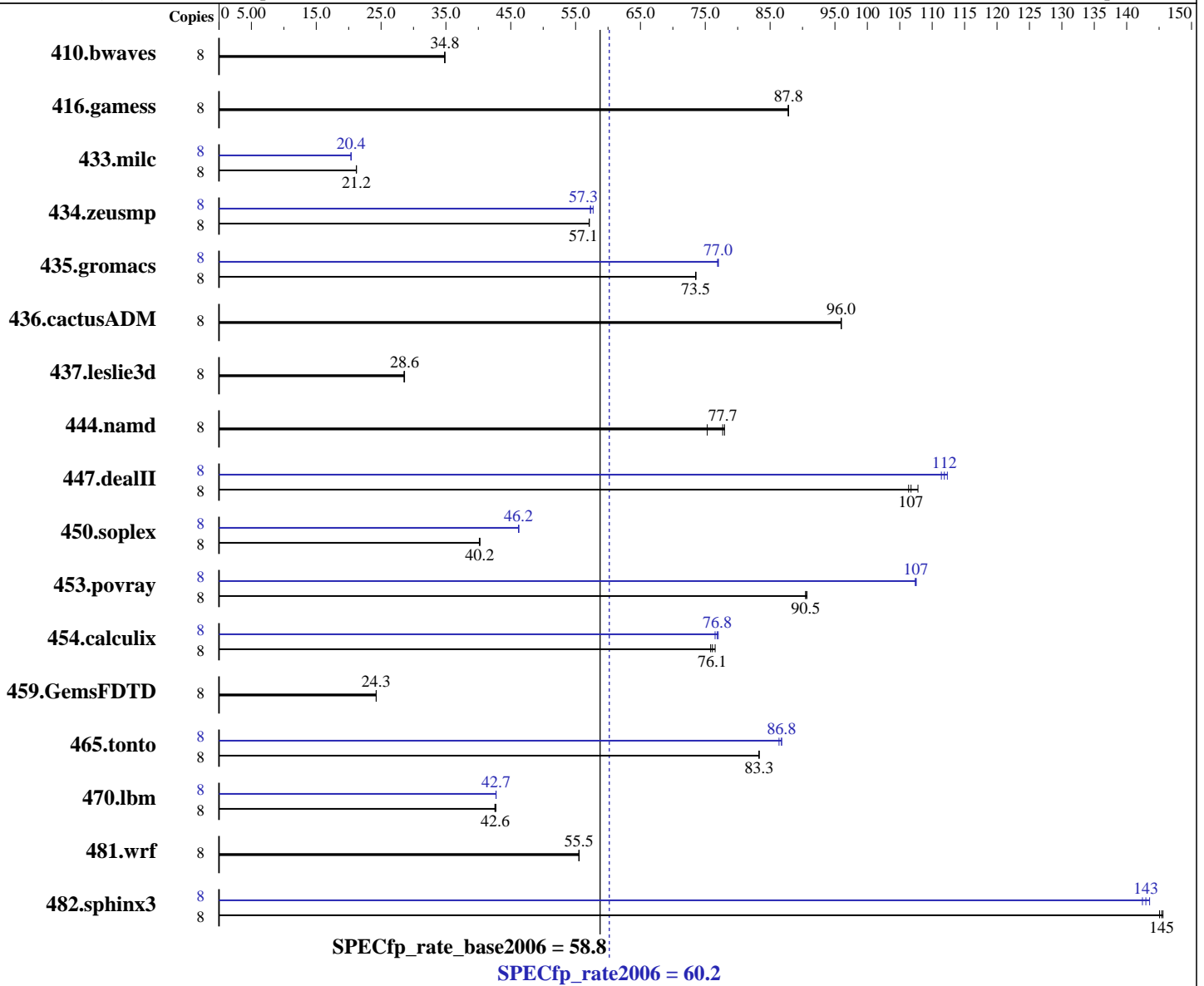
Test sponsor: NEC Corporation

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  
 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: 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp on an x86\_64  
 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: 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: Multiuser, Runlevel 3  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	3120	34.8	<b>3120</b>	<b>34.8</b>	3125	34.8	8	3120	34.8	<b>3120</b>	<b>34.8</b>	3125	34.8		
416.gamess	8	1783	87.9	1785	87.8	<b>1783</b>	<b>87.8</b>	8	1783	87.9	1785	87.8	<b>1783</b>	<b>87.8</b>		
433.milc	8	<b>3465</b>	<b>21.2</b>	3468	21.2	3465	21.2	8	<b>3604</b>	<b>20.4</b>	3606	20.4	3604	20.4		
434.zeusmp	8	<b>1275</b>	<b>57.1</b>	1275	57.1	1275	57.1	8	1261	57.7	<b>1270</b>	<b>57.3</b>	1271	57.3		
435.gromacs	8	<b>777</b>	<b>73.5</b>	776	73.6	777	73.5	8	743	76.9	742	77.0	<b>742</b>	<b>77.0</b>		
436.cactusADM	8	996	96.0	<b>996</b>	<b>96.0</b>	996	96.0	8	996	96.0	<b>996</b>	<b>96.0</b>	996	96.0		
437.leslie3d	8	2636	28.5	<b>2628</b>	<b>28.6</b>	2627	28.6	8	2636	28.5	<b>2628</b>	<b>28.6</b>	2627	28.6		
444.namd	8	852	75.3	823	78.0	<b>826</b>	<b>77.7</b>	8	852	75.3	823	78.0	<b>826</b>	<b>77.7</b>		
447.dealII	8	860	106	849	108	<b>857</b>	<b>107</b>	8	821	111	<b>818</b>	<b>112</b>	815	112		
450.soplex	8	1658	40.2	<b>1659</b>	<b>40.2</b>	1662	40.1	8	1443	46.2	1444	46.2	<b>1444</b>	<b>46.2</b>		
453.povray	8	<b>470</b>	<b>90.5</b>	469	90.7	470	90.5	8	<b>396</b>	<b>107</b>	396	108	396	107		
454.calculix	8	<b>867</b>	<b>76.1</b>	870	75.8	862	76.5	8	863	76.5	<b>859</b>	<b>76.8</b>	857	77.0		
459.GemsFDTD	8	<b>3500</b>	<b>24.3</b>	3502	24.2	3499	24.3	8	<b>3500</b>	<b>24.3</b>	3502	24.2	3499	24.3		
465.tonto	8	<b>945</b>	<b>83.3</b>	945	83.3	945	83.3	8	<b>907</b>	<b>86.8</b>	907	86.8	911	86.4		
470.lbm	8	2573	42.7	<b>2580</b>	<b>42.6</b>	2583	42.6	8	2572	42.7	<b>2572</b>	<b>42.7</b>	2573	42.7		
481.wrf	8	1608	55.6	<b>1610</b>	<b>55.5</b>	1610	55.5	8	1608	55.6	<b>1610</b>	<b>55.5</b>	1610	55.5		
482.sphinx3	8	<b>1072</b>	<b>145</b>	1071	146	1075	145	8	1086	144	1095	142	<b>1091</b>	<b>143</b>		

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.

BIOS Configuration:

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## General Notes (Continued)

Hyper-Threading Technology = Disabled

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:

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.deallI: -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

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## Base Optimization Flags (Continued)

C++ benchmarks:  
-fast

Fortran benchmarks:  
-fast

Benchmarks using both Fortran and C:  
-fast

## 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



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## 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:

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>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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