



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/110Rh-1
(Intel Xeon processor X3210)

SPECfp®_rate2006 = 33.0

SPECfp_rate_base2006 = 31.8

CPU2006 license: 9006

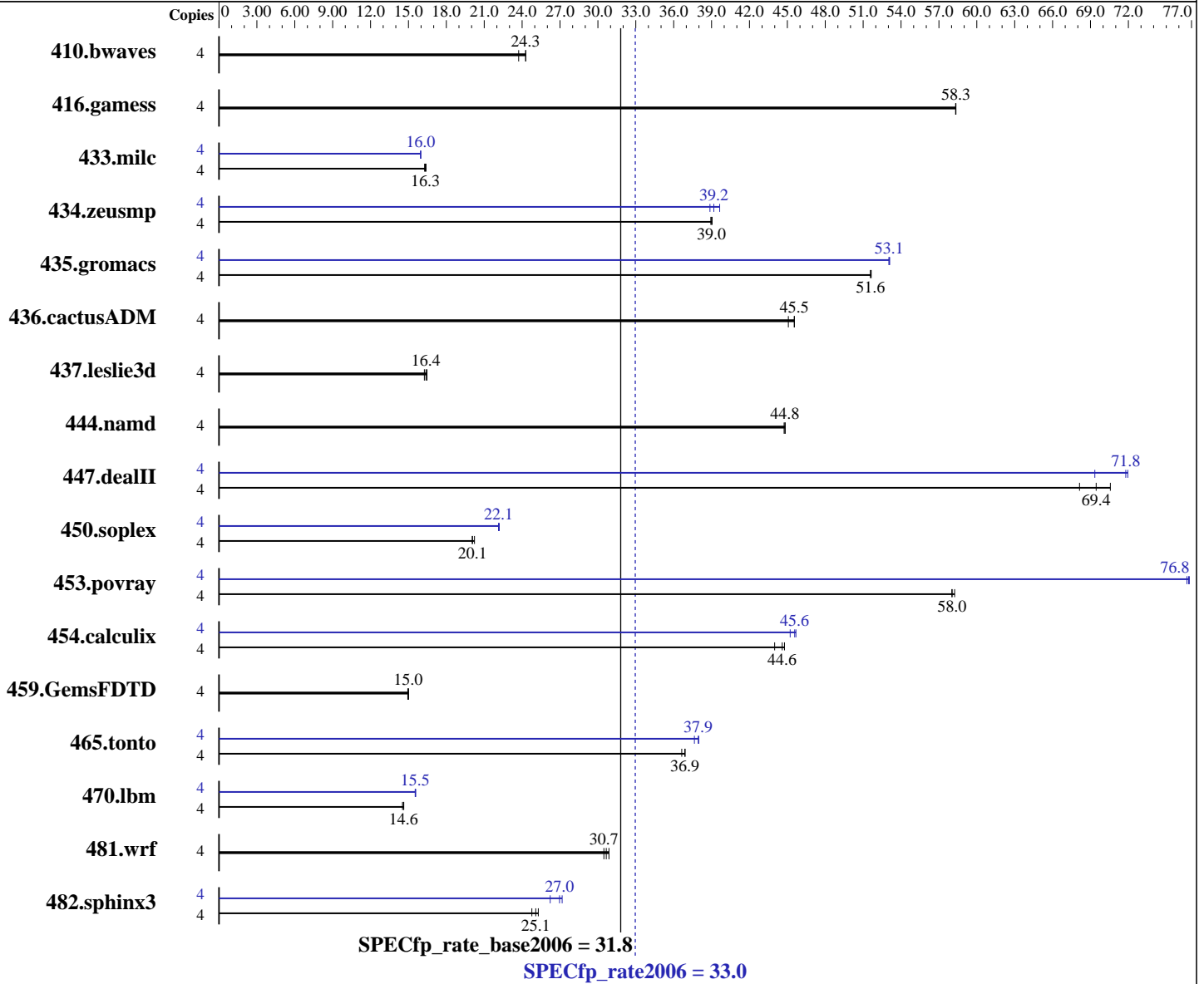
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Nov-2007

Hardware Availability: Jan-2007

Software Availability: Apr-2007



Hardware

CPU Name: Intel Xeon X3210
 CPU Characteristics: 2.13 GHz, 2x4 MB L2 shared, 1066 MHz bus
 CPU MHz: 2133
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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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: None
Other Cache: None
Memory: 4 GB (4x1 GB PC2-5300E, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x80 GB SATAII, 7200RPM
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	4	2291	23.7	2239	24.3	<u>2239</u>	<u>24.3</u>	4	2291	23.7	2239	24.3	<u>2239</u>	<u>24.3</u>		
416.gamess	4	1342	58.3	1343	58.3	<u>1343</u>	<u>58.3</u>	4	1342	58.3	1343	58.3	<u>1343</u>	<u>58.3</u>		
433.milc	4	2256	16.3	<u>2248</u>	<u>16.3</u>	2240	16.4	4	<u>2300</u>	<u>16.0</u>	2300	16.0	2299	16.0		
434.zeusmp	4	<u>933</u>	<u>39.0</u>	932	39.0	935	38.9	4	918	39.6	936	38.9	<u>929</u>	<u>39.2</u>		
435.gromacs	4	<u>554</u>	<u>51.6</u>	554	51.6	553	51.6	4	538	53.0	538	53.1	<u>538</u>	<u>53.1</u>		
436.cactusADM	4	1060	45.1	<u>1049</u>	<u>45.5</u>	1049	45.6	4	1060	45.1	<u>1049</u>	<u>45.5</u>	1049	45.6		
437.leslie3d	4	2312	16.3	<u>2295</u>	<u>16.4</u>	2283	16.5	4	2312	16.3	<u>2295</u>	<u>16.4</u>	2283	16.5		
444.namd	4	717	44.7	<u>716</u>	<u>44.8</u>	716	44.8	4	717	44.7	<u>716</u>	<u>44.8</u>	716	44.8		
447.dealII	4	672	68.1	<u>659</u>	<u>69.4</u>	648	70.6	4	660	69.3	636	72.0	<u>637</u>	<u>71.8</u>		
450.soplex	4	1649	20.2	<u>1662</u>	<u>20.1</u>	1664	20.0	4	1507	22.1	1503	22.2	<u>1507</u>	<u>22.1</u>		
453.povray	4	<u>367</u>	<u>58.0</u>	365	58.2	367	58.0	4	<u>277</u>	<u>76.8</u>	277	76.8	278	76.6		
454.calculix	4	750	44.0	<u>740</u>	<u>44.6</u>	737	44.8	4	722	45.7	730	45.2	<u>724</u>	<u>45.6</u>		
459.GemsFDTD	4	2839	14.9	<u>2832</u>	<u>15.0</u>	2827	15.0	4	2839	14.9	<u>2832</u>	<u>15.0</u>	2827	15.0		
465.tonto	4	1066	36.9	1074	36.6	<u>1067</u>	<u>36.9</u>	4	1046	37.6	<u>1037</u>	<u>37.9</u>	1036	38.0		
470.lbm	4	<u>3764</u>	<u>14.6</u>	3783	14.5	3756	14.6	4	3538	15.5	<u>3536</u>	<u>15.5</u>	3528	15.6		
481.wrf	4	1466	30.5	<u>1457</u>	<u>30.7</u>	1447	30.9	4	1466	30.5	<u>1457</u>	<u>30.7</u>	1447	30.9		
482.sphinx3	4	3147	24.8	<u>3108</u>	<u>25.1</u>	3084	25.3	4	2869	27.2	2973	26.2	<u>2891</u>	<u>27.0</u>		

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 1066 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.



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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.deallI: -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>

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

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