SPEC® CFP2006 Result
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NEC Corporation

Express5800/i120Ra-e1
(Intel Xeon L5215)

$SPECfp®\_rate2006 =$ 22.8

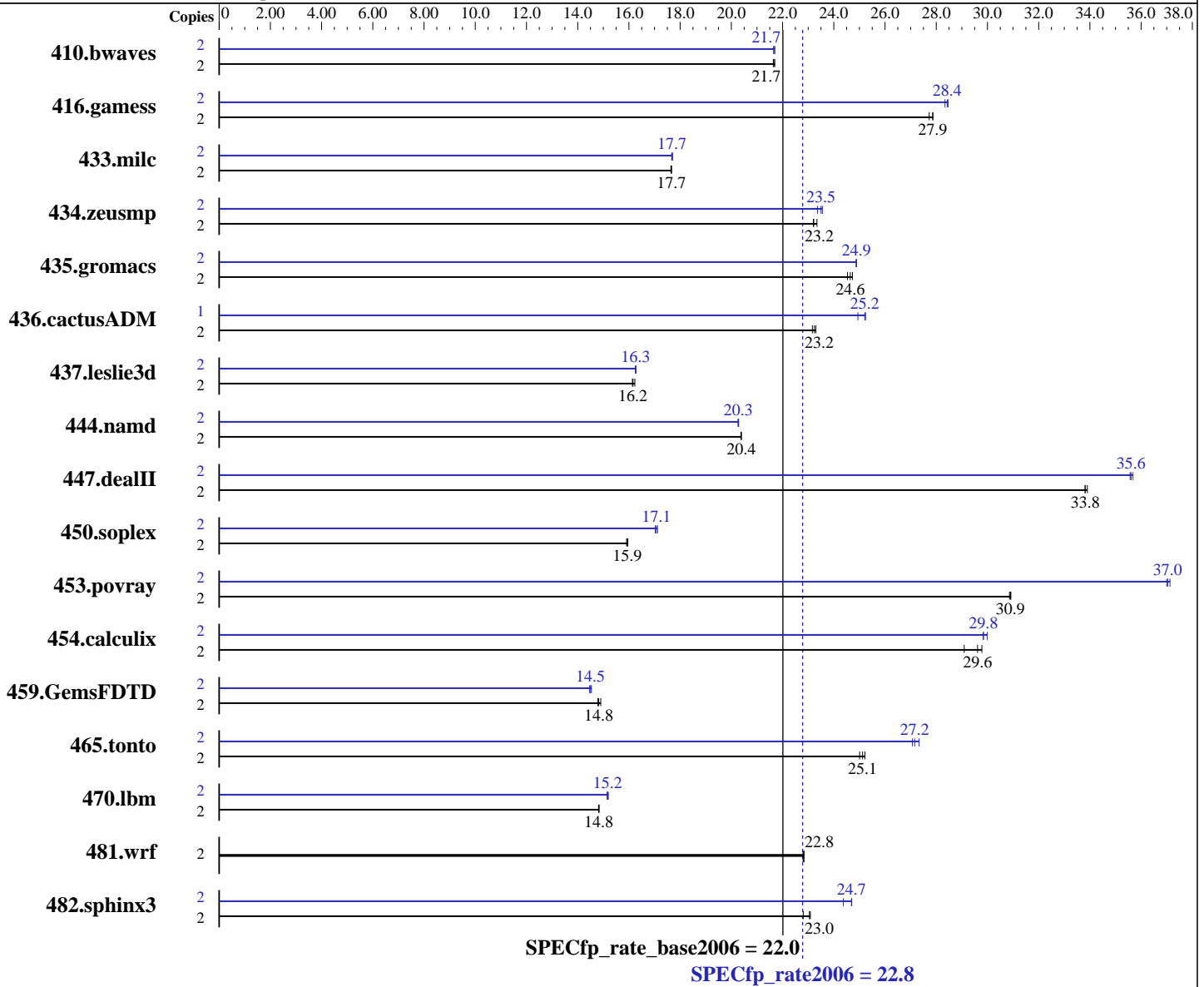SPECfp_rate_base2006 = 22.0

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2009

Hardware Availability: Jan-2009

Software Availability: Nov-2008

SPECfp_rate_base2006 = 22.0

SPECfp_rate2006 = 22.8

Hardware

CPU Name: Intel Xeon L5215
CPU Characteristics: 1066 MHz system bus
CPU MHz: 1867
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
CPU(s) orderable: 1,2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 6 MB I+D on chip per chip

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Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp

Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20081105 Package ID: l_cproc_p_11.0.074, l_cprof_p_11.0.074

Auto Parallel: Yes
File System: ReiserFS
System State: Run level 3 (multi-user)
Base Pointers: 64-bit

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L3 Cache:	None
Other Cache:	None
Memory:	16 GB (4x4 GB PC2-5300P, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x80 GB SATAII, 7200 RPM
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	1256	21.6	1253	21.7	**1255**	**21.7**	2	1256	21.6	1253	21.7	**1253**	**21.7**
416.gamess	2	1412	27.7	1405	27.9	**1406**	**27.9**	2	1382	28.3	1376	28.5	**1378**	**28.4**
433.milc	2	**1040**	**17.7**	1039	17.7	1041	17.6	2	1039	17.7	1037	17.7	**1038**	**17.7**
434.zeusmp	2	780	23.3	**784**	**23.2**	784	23.2	2	779	23.4	**774**	**23.5**	773	23.6
435.gromacs	2	582	24.5	578	24.7	**579**	**24.6**	2	574	24.9	**574**	**24.9**	574	24.9
436.cactusADM	2	1026	23.3	**1028**	**23.2**	1032	23.2	1	479	24.9	473	25.2	**474**	**25.2**
437.leslie3d	2	**1163**	**16.2**	1165	16.1	1158	16.2	2	1157	16.3	**1155**	**16.3**	1155	16.3
444.namd	2	**787**	**20.4**	787	20.4	787	20.4	2	**791**	**20.3**	792	20.3	791	20.3
447.dealII	2	675	33.9	**677**	**33.8**	677	33.8	2	643	35.6	**643**	**35.6**	641	35.7
450.soplex	2	**1047**	**15.9**	1048	15.9	1045	16.0	2	980	17.0	**977**	**17.1**	975	17.1
453.povray	2	345	30.9	344	30.9	**344**	**30.9**	2	288	37.0	**287**	**37.0**	287	37.1
454.calculix	2	554	29.8	**557**	**29.6**	567	29.1	2	550	30.0	553	29.8	**553**	**29.8**
459.GemsFDTD	2	1435	14.8	**1432**	**14.8**	1424	14.9	2	1467	14.5	**1463**	**14.5**	1460	14.5
465.tonto	2	780	25.2	787	25.0	**783**	**25.1**	2	**725**	**27.2**	727	27.1	720	27.3
470.lbm	2	1852	14.8	1855	14.8	**1854**	**14.8**	2	1808	15.2	**1811**	**15.2**	1814	15.1
481.wrf	2	978	22.8	**979**	**22.8**	980	22.8	2	978	22.8	**979**	**22.8**	980	22.8
482.sphinx3	2	1709	22.8	**1691**	**23.0**	1689	23.1	2	1599	24.4	**1579**	**24.7**	1578	24.7

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

Submit Notes

```
    The config file option 'submit' was used.
     taskset was used to bind processes to cores except
     for 436.cactusADM peak
```

Operating System Notes

```
     'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
     OMP_NUM_THREADS set to number of cores
     KMP_AFFINITY set to "physical,0"
     KMP_STACKSIZE set to 64M
```

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CPU2006 license: 9006
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Tested by: NEC Corporation

Test date: Feb-2009
Hardware Availability: Jan-2009
Software Availability: Nov-2008

Platform Notes

```
Bios settings:
Hardware Prefetcher:          Enabled
Adjacent Cache Line Prefetch:  Enabled
```

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:
    -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:
    -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

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Test sponsor: NEC Corporation		**Hardware Availability:**	Jan-2009
Tested by: NEC Corporation		**Software Availability:**	Nov-2008

Base Optimization Flags (Continued)

Fortran benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

```
482.sphinx3: /opt/intel/Compiler/11.0/074/bin/ia32/icc
        -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
        -I/opt/intel/Compiler/11.0/074/ipp/ia32/include
```

C++ benchmarks (except as noted below):
```
icpc
```

```
450.soplex: /opt/intel/Compiler/11.0/074/bin/ia32/icpc
        -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
        -I/opt/intel/Compiler/11.0/074/ipp/ia32/include
```

Fortran benchmarks (except as noted below):
```
ifort
```

```
437.leslie3d: /opt/intel/Compiler/11.0/074/bin/ia32/ifort
        -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
        -I/opt/intel/Compiler/11.0/074/ipp/ia32/include
```

Benchmarks using both Fortran and C:
```
icc ifort
```

Peak 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
      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
```

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Peak Portability Flags (Continued)

```
 465.tonto: -DSPEC_CPU_LP64
  470.lbm: -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) -xSSE4.1 -ipo -O3
             -no-prec-div -static -fno-alias

    470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
             -auto-ilp32

 482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
```

C++ benchmarks:

```
   444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static -fno-alias -auto-ilp32

  447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

  450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static -opt-malloc-options=3

  453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static -unroll4 -ansi-alias
```

Fortran benchmarks:

```
  410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

  416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static -unroll2 -Ob0 -ansi-alias
             -scalar-rep-

  434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static

  437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static -opt-malloc-options=3 -opt-prefetch

  459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
             -no-prec-div -static -unroll2 -Ob0 -opt-prefetch
```

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Peak Optimization Flags (Continued)

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -opt-prefetch -parallel
-auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revE.20090710.html
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revE.20090710.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 23:02:40 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 March 2009.