SPEC® CFP2006 Result
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NEC Corporation

Express5800/120Ri-2
(Intel Xeon processor E5345)

$SPECfp®\_rate2006 =$ 55.5

$SPECfp\_rate\_base2006 =$ 53.6
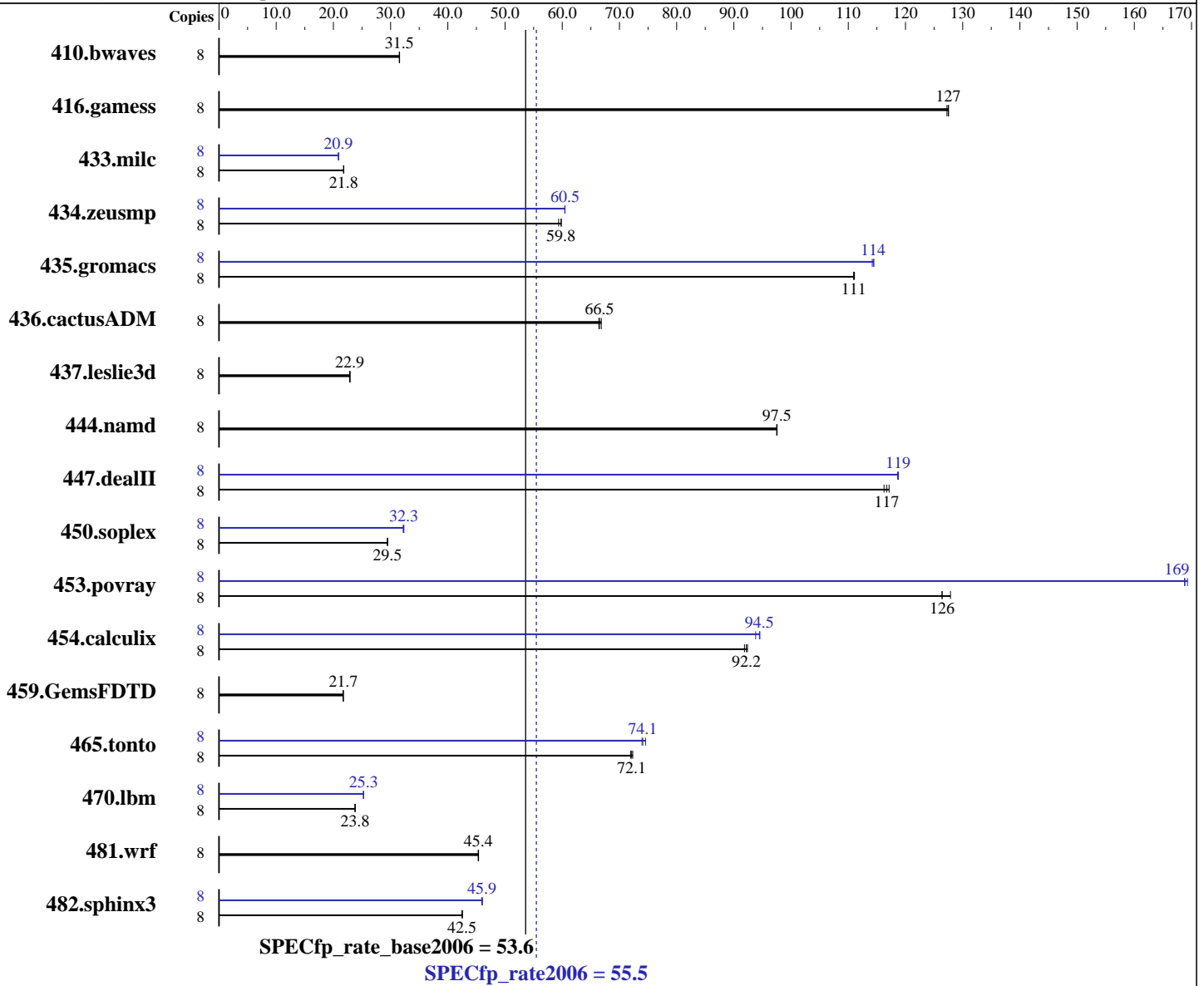
CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Jun-2007
Hardware Availability: Jan-2007
Software Availability: Jun-2007

Copies	Benchmark	Result
8	410.bwaves	31.5
8	416.gamess	127
8	433.milc	20.9
8	433.milc	21.8
8	434.zeusmp	60.5
8	434.zeusmp	59.8
8	435.gromacs	114
8	435.gromacs	111
8	436.cactusADM	66.5
8	437.leslie3d	22.9
8	444.namd	97.5
8	447.dealII	119
8	447.dealII	117
8	450.soplex	32.3
8	450.soplex	29.5
8	453.povray	169
8	453.povray	126
8	454.calculix	94.5
8	454.calculix	92.2
8	459.GemsFDTD	21.7
8	465.tonto	74.1
8	465.tonto	72.1
8	470.lbm	25.3
8	470.lbm	23.8
8	481.wrf	45.4
8	482.sphinx3	45.9
8	482.sphinx3	42.5

SPECfp_rate_base2006 = 53.6
SPECfp_rate2006 = 55.5

Hardware

CPU Name: Intel Xeon E5345
CPU Characteristics: 2.33 GHz, 2x4 MB L2 shared, 1333 MHz bus
CPU MHz: 2333
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1,2 chips
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

Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp for 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

Continued on next page

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L3 Cache:	None	System State:	Multiuser, Runlevel 3
Other Cache:	None	Base Pointers:	64-bit
Memory:	16 GB (8x2 GB DDR2 5300F, 2 rank, CL5-5-5, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1x73.2 GB SAS, 15000RPM	Other Software:	None
Other Hardware:	None		

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	**3448**	**31.5**	3444	31.6	3448	31.5	8	**3448**	**31.5**	3444	31.6	3448	31.5
416.gamess	8	**1229**	**127**	1228	128	1231	127	8	**1229**	**127**	1228	128	1231	127
433.milc	8	**3370**	**21.8**	3368	21.8	3371	21.8	8	3515	20.9	3516	20.9	**3515**	**20.9**
434.zeusmp	8	**1218**	**59.8**	1217	59.8	1226	59.4	8	1204	60.5	1204	60.4	**1204**	**60.5**
435.gromacs	8	**515**	**111**	515	111	514	111	8	**499**	**114**	500	114	499	114
436.cactusADM	8	**1437**	**66.5**	1431	66.8	1440	66.4	8	**1437**	**66.5**	1431	66.8	1440	66.4
437.leslie3d	8	3281	22.9	**3287**	**22.9**	3295	22.8	8	3281	22.9	**3287**	**22.9**	3295	22.8
444.namd	8	658	97.6	**658**	**97.5**	658	97.5	8	658	97.6	**658**	**97.5**	658	97.5
447.dealII	8	787	116	**784**	**117**	781	117	8	772	119	771	119	**771**	**119**
450.soplex	8	2268	29.4	**2264**	**29.5**	2263	29.5	8	2064	32.3	**2066**	**32.3**	2072	32.2
453.povray	8	337	126	**337**	**126**	333	128	8	251	169	**252**	**169**	252	169
454.calculix	8	**716**	**92.2**	718	91.9	714	92.4	8	**699**	**94.5**	698	94.6	704	93.8
459.GemsFDTD	8	3913	21.7	3906	21.7	**3906**	**21.7**	8	3913	21.7	3906	21.7	**3906**	**21.7**
465.tonto	8	1088	72.3	**1091**	**72.1**	1094	72.0	8	**1063**	**74.1**	1065	73.9	1056	74.6
470.lbm	8	**4621**	**23.8**	4621	23.8	4621	23.8	8	**4351**	**25.3**	4352	25.3	4350	25.3
481.wrf	8	**1970**	**45.4**	1973	45.3	1969	45.4	8	**1970**	**45.4**	1973	45.3	1969	45.4
482.sphinx3	8	**3668**	**42.5**	3671	42.5	3664	42.6	8	3395	45.9	**3393**	**45.9**	3385	46.1

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 1333 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 Express5800/120Rg-1(Intel Xeon processor E5345) and
the Express5800/120Ri-2(Intel Xeon processor E5345) models are electronically equivalent.
The results have been measured on a Express5800/120Ri-2(Intel Xeon processor E5345) model.

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Express5800/120Ri-2
(Intel Xeon processor E5345)

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SPECfp_rate_base2006 = 53.6

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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CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jun-2007

Hardware Availability: Jan-2007

Software Availability: Jun-2007

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-linux-flags.html

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