SPEC® CFP2006 Result

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NEC Corporation

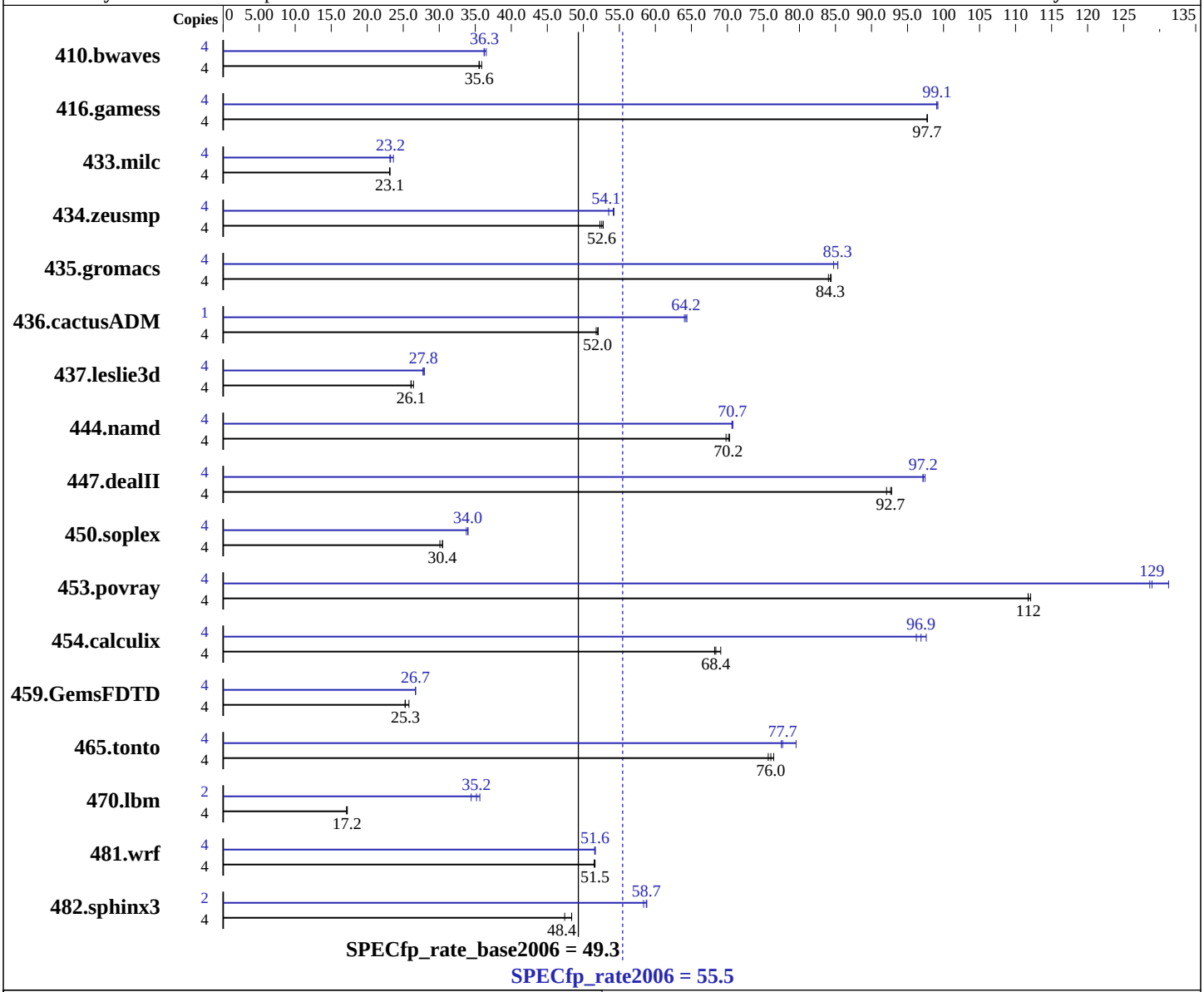
Express5800/120Lj
(Intel Xeon X5260)

SPECfp®_rate2006 = 55.5

SPECfp_rate_base2006 = 49.3

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

Test date: Feb-2008
Hardware Availability: Feb-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon X5260
CPU Characteristics:	3.33 GHz, 6 MB L2, 1333 MHz bus
CPU MHz:	3333
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 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) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel:	Yes
File System:	ext2

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L3 Cache: None
Other Cache: None
Memory: 12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 15000RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.tar.gz, Version 2.17

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1515	35.9	**1529**	**35.6**	1531	35.5	4	**1499**	**36.3**	1501	36.2	1488	36.5
416.gamess	4	801	97.7	801	97.8	**801**	**97.7**	4	**790**	**99.1**	789	99.2	791	99.0
433.milc	4	1590	23.1	**1588**	**23.1**	1585	23.2	4	1586	23.1	**1581**	**23.2**	1553	23.6
434.zeusmp	4	696	52.3	690	52.8	**693**	**52.6**	4	**672**	**54.1**	680	53.5	671	54.3
435.gromacs	4	**339**	**84.3**	340	84.0	338	84.4	4	**335**	**85.3**	335	85.3	337	84.7
436.cactusADM	4	918	52.1	**919**	**52.0**	923	51.8	1	**186**	**64.2**	187	64.0	186	64.4
437.leslie3d	4	1423	26.4	1442	26.1	**1441**	**26.1**	4	**1353**	**27.8**	1356	27.7	1346	27.9
444.namd	4	460	69.8	456	70.3	**457**	**70.2**	4	**454**	**70.7**	453	70.8	454	70.6
447.dealII	4	493	92.8	**494**	**92.7**	497	92.1	4	**471**	**97.2**	471	97.1	470	97.4
450.soplex	4	**1096**	**30.4**	1109	30.1	1095	30.5	4	988	33.8	**982**	**34.0**	981	34.0
453.povray	4	**190**	**112**	190	112	190	112	4	165	129	162	131	**165**	**129**
454.calculix	4	484	68.2	**483**	**68.4**	478	69.1	4	343	96.2	**341**	**96.9**	338	97.6
459.GemsFDTD	4	1645	25.8	1681	25.3	**1678**	**25.3**	4	1590	26.7	**1590**	**26.7**	1588	26.7
465.tonto	4	520	75.7	**518**	**76.0**	515	76.4	4	508	77.5	495	79.5	**507**	**77.7**
470.lbm	4	**3198**	**17.2**	3188	17.2	3209	17.1	2	798	34.4	**781**	**35.2**	771	35.6
481.wrf	4	**867**	**51.5**	868	51.5	865	51.6	4	865	51.7	**866**	**51.6**	866	51.6
482.sphinx3	4	1644	47.4	1611	48.4	**1611**	**48.4**	2	**664**	**58.7**	668	58.4	663	58.8

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
 OMP_NUM_THREADS set to number of cores
```

Platform Notes

```
Bios settings:
Intel SpeedStep Technology: Disabled
```

General Notes

```
All benchmarks compiled in 64-bit mode except 437.leslie3d,
450.soplex, 470.lbm and 482.sphinx3, for peak, are
compiled in 32-bit mode
 The NEC Express5800/120Lj(Intel Xeon X5260) and
 the Bull NovaScale T860 E1(Intel Xeon X5260,3.33GHz) models are electronically equivalent.
 The results have been measured on a NEC Express5800/120Lj(Intel Xeon X5260) 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.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`

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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 (except as noted below):
`/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

433.milc: `icc`

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

450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

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

437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib -I/opt/intel/fc/10.1.008/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
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 -fno-alias -auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

Continued on next page

Peak Optimization Flags (Continued)

435.gromacs: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.xml`

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