SPEC® CFP2006 Result

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NEC Corporation

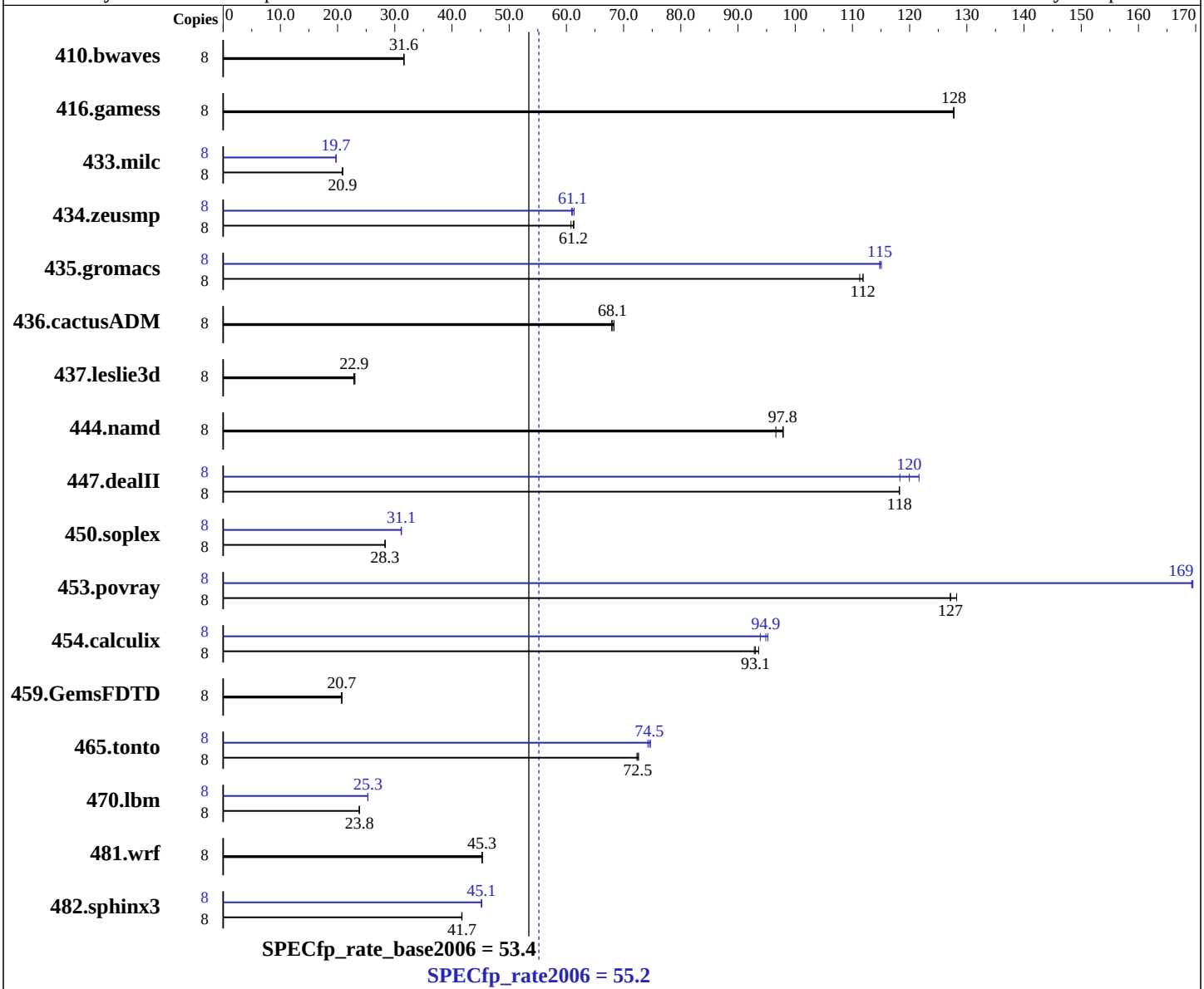
Express5800/120Bb-m6
(Intel Xeon processor E5345)

SPECfp®_rate2006 = 55.2

SPECfp_rate_base2006 = 53.4

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 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

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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: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 10000RPM
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	3440	31.6	3440	31.6	**3440**	**31.6**	8	3440	31.6	3440	31.6	**3440**	**31.6**
416.gamess	8	1226	128	**1226**	**128**	1227	128	8	1226	128	**1226**	**128**	1227	128
433.milc	8	3515	20.9	**3516**	**20.9**	3523	20.8	8	3721	19.7	3722	19.7	**3722**	**19.7**
434.zeusmp	8	1197	60.8	**1189**	**61.2**	1187	61.3	8	**1192**	**61.1**	1195	60.9	1187	61.3
435.gromacs	8	511	112	**511**	**112**	513	111	8	**498**	**115**	498	115	496	115
436.cactusADM	8	1408	67.9	**1404**	**68.1**	1399	68.3	8	1408	67.9	**1404**	**68.1**	1399	68.3
437.leslie3d	8	3264	23.0	3294	22.8	**3279**	**22.9**	8	3264	23.0	3294	22.8	**3279**	**22.9**
444.namd	8	655	97.9	**656**	**97.8**	664	96.6	8	655	97.9	**656**	**97.8**	664	96.6
447.dealII	8	774	118	774	118	**774**	**118**	8	774	118	752	122	**763**	**120**
450.soplex	8	**2357**	**28.3**	2355	28.3	2359	28.3	8	2141	31.2	**2142**	**31.1**	2145	31.1
453.povray	8	332	128	**335**	**127**	335	127	8	251	169	251	170	**251**	**169**
454.calculix	8	711	92.8	**709**	**93.1**	705	93.6	8	693	95.2	**696**	**94.9**	703	93.9
459.GemsFDTD	8	**4096**	**20.7**	4099	20.7	4089	20.8	8	**4096**	**20.7**	4099	20.7	4089	20.8
465.tonto	8	1084	72.6	**1086**	**72.5**	1088	72.3	8	1060	74.2	1054	74.7	**1057**	**74.5**
470.lbm	8	**4617**	**23.8**	4617	23.8	4618	23.8	8	4342	25.3	**4343**	**25.3**	4348	25.3
481.wrf	8	**1974**	**45.3**	1971	45.3	1976	45.2	8	**1974**	**45.3**	1971	45.3	1976	45.2
482.sphinx3	8	3739	41.7	3734	41.8	**3736**	**41.7**	8	3449	45.2	3454	45.1	**3454**	**45.1**

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.
```

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

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:

Continued on next page

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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