SPEC® CFP2006 Result

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NEC Corporation

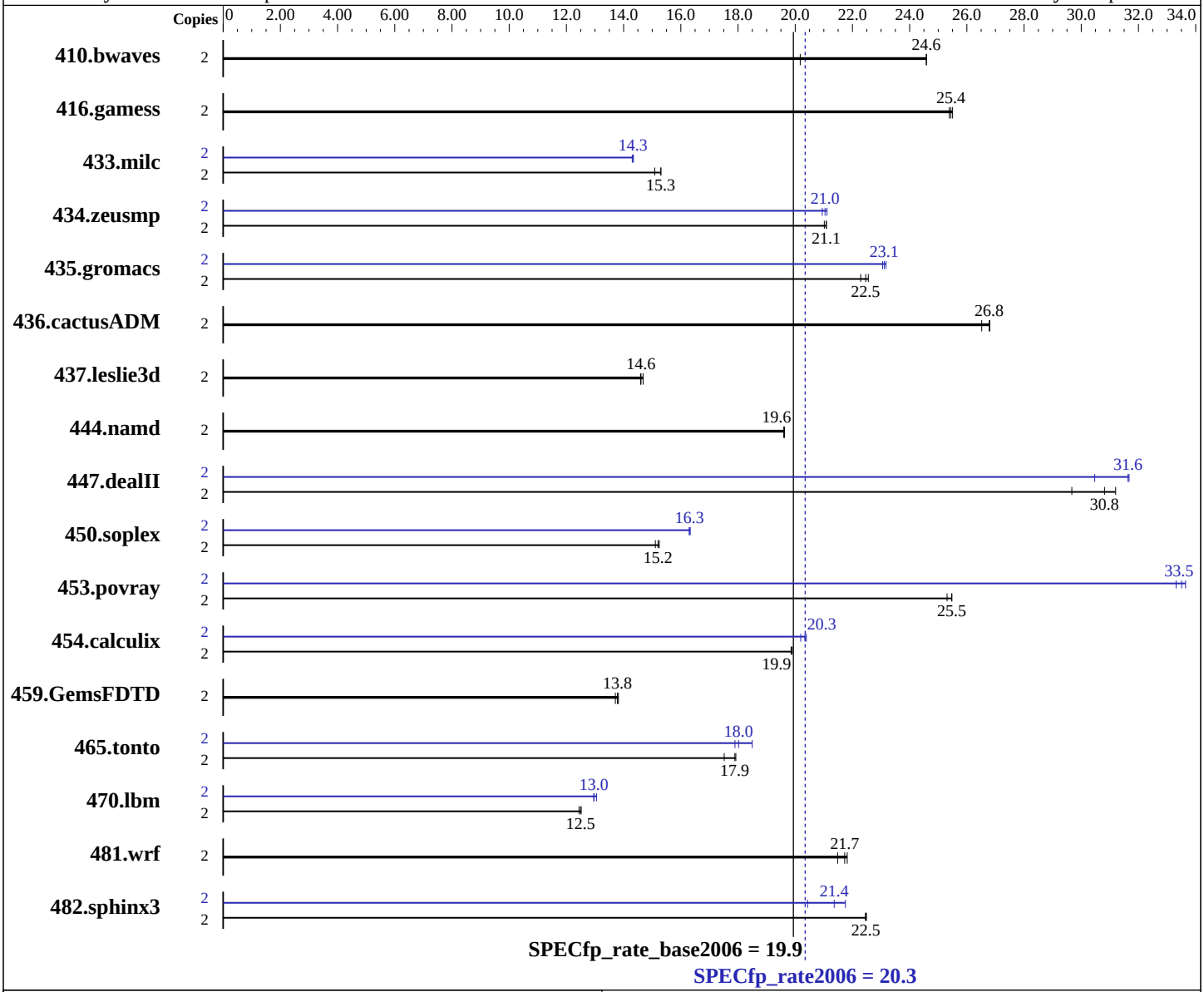
Express5800/i110Rh-1
(Intel Xeon processor 3040)

SPECfp®_rate2006 = 20.3

SPECfp_rate_base2006 = 19.9

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

Test date: Nov-2007
Hardware Availability: May-2007
Software Availability: Apr-2007



Hardware

CPU Name:	Intel Xeon 3040
CPU Characteristics:	1.86 GHz, 2 MB L2, 1066 MHz bus
CPU MHz:	1866
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	2 MB I+D on chip per chip

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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	2	1347	20.2	1105	24.6	**1106**	**24.6**	2	1347	20.2	1105	24.6	**1106**	**24.6**
416.gamess	2	1543	25.4	**1539**	**25.4**	1536	25.5	2	1543	25.4	**1539**	**25.4**	1536	25.5
433.milc	2	1217	15.1	1200	15.3	**1200**	**15.3**	2	1280	14.3	1284	14.3	**1282**	**14.3**
434.zeusmp	2	866	21.0	**863**	**21.1**	863	21.1	2	862	21.1	869	20.9	**865**	**21.0**
435.gromacs	2	**636**	**22.5**	641	22.3	633	22.6	2	616	23.2	619	23.1	**618**	**23.1**
436.cactusADM	2	901	26.5	892	26.8	**892**	**26.8**	2	901	26.5	892	26.8	**892**	**26.8**
437.leslie3d	2	1281	14.7	1288	14.6	**1287**	**14.6**	2	1281	14.7	1288	14.6	**1287**	**14.6**
444.namd	2	817	19.6	818	19.6	**818**	**19.6**	2	817	19.6	818	19.6	**818**	**19.6**
447.dealII	2	**743**	**30.8**	771	29.7	733	31.2	2	**723**	**31.6**	751	30.5	722	31.7
450.soplex	2	1104	15.1	1094	15.2	**1097**	**15.2**	2	**1023**	**16.3**	1024	16.3	1021	16.3
453.povray	2	418	25.5	**418**	**25.5**	420	25.3	2	**318**	**33.5**	319	33.3	316	33.6
454.calculix	2	829	19.9	**830**	**19.9**	831	19.9	2	817	20.2	809	20.4	**811**	**20.3**
459.GemsFDTD	2	1548	13.7	1536	13.8	**1540**	**13.8**	2	1548	13.7	1536	13.8	**1540**	**13.8**
465.tonto	2	1123	17.5	**1100**	**17.9**	1098	17.9	2	**1092**	**18.0**	1100	17.9	1064	18.5
470.lbm	2	2209	12.4	2195	12.5	**2199**	**12.5**	2	2121	13.0	**2120**	**13.0**	2105	13.1
481.wrf	2	**1028**	**21.7**	1024	21.8	1040	21.5	2	**1028**	**21.7**	1024	21.8	1040	21.5
482.sphinx3	2	1736	22.5	**1735**	**22.5**	1733	22.5	2	**1825**	**21.4**	1908	20.4	1792	21.8

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
```

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.
```

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 13:45:07 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 11 December 2007.