SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

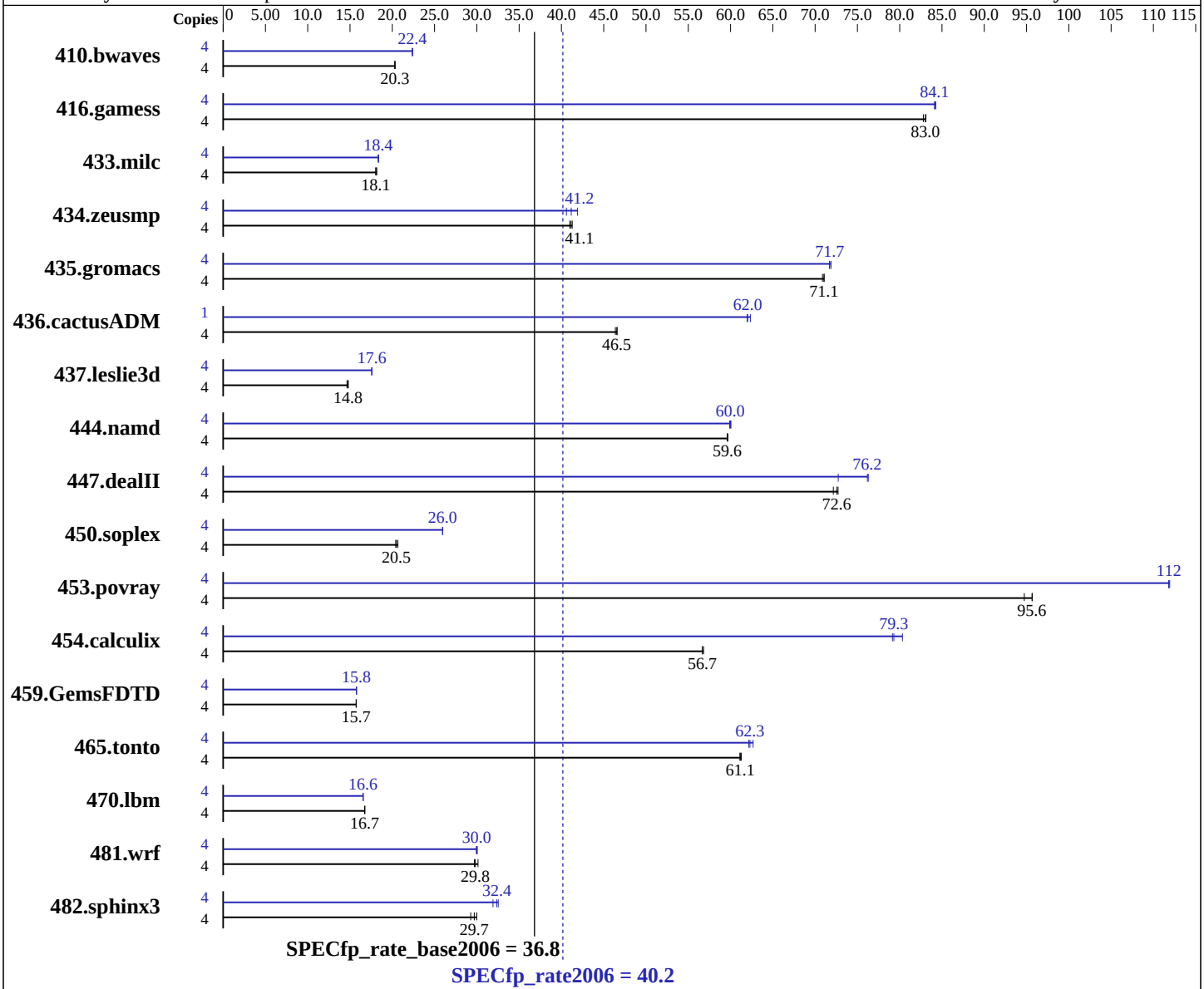
NovaScale R440 E1
(Intel Xeon E5440, 2.83 GHz)

SPECfp®_rate2006 = 40.2

SPECfp_rate_base2006 = 36.8

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: NEC Corporation

Test date: Jun-2008
Hardware Availability: Apr-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5440
CPU Characteristics:	2.83 GHz, 2x6 MB L2 shared, 1333 MHz bus
CPU MHz:	2833
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

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 Linux version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Bull SAS

NovaScale R440 E1
(Intel Xeon E5440, 2.83 GHz)

SPECfp_rate2006 = 40.2

SPECfp_rate_base2006 = 36.8

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: NEC Corporation

Test date: Jun-2008
Hardware Availability: Apr-2008
Software Availability: Nov-2007

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, 15000RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils 2.17

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2677	20.3	2675	20.3	**2676**	**20.3**	4	2426	22.4	2430	22.4	**2430**	**22.4**
416.gamess	4	**943**	**83.0**	946	82.8	942	83.1	4	**931**	**84.1**	931	84.1	929	84.3
433.milc	4	2035	18.0	**2032**	**18.1**	2022	18.2	4	2002	18.3	**2000**	**18.4**	1998	18.4
434.zeusmp	4	888	41.0	**885**	**41.1**	882	41.3	4	869	41.9	**884**	**41.2**	897	40.6
435.gromacs	4	**402**	**71.1**	402	71.1	403	70.9	4	397	71.9	398	71.7	**398**	**71.7**
436.cactusADM	4	**1027**	**46.5**	1026	46.6	1031	46.4	1	193	62.0	**193**	**62.0**	192	62.4
437.leslie3d	4	**2546**	**14.8**	2542	14.8	2568	14.6	4	2138	17.6	2139	17.6	**2139**	**17.6**
444.namd	4	**538**	**59.6**	537	59.7	538	59.6	4	**535**	**60.0**	534	60.0	536	59.9
447.dealII	4	**631**	**72.6**	629	72.7	634	72.2	4	629	72.7	600	76.3	**601**	**76.2**
450.soplex	4	**1628**	**20.5**	1635	20.4	1615	20.7	4	1286	25.9	**1285**	**26.0**	1285	26.0
453.povray	4	222	95.7	225	94.7	**222**	**95.6**	4	**190**	**112**	190	112	190	112
454.calculix	4	583	56.7	581	56.8	**582**	**56.7**	4	417	79.1	411	80.3	**416**	**79.3**
459.GemsFDTD	4	2695	15.7	2699	15.7	**2697**	**15.7**	4	**2692**	**15.8**	2695	15.7	2691	15.8
465.tonto	4	642	61.3	**644**	**61.1**	644	61.1	4	628	62.7	**632**	**62.3**	633	62.2
470.lbm	4	3283	16.7	**3282**	**16.7**	3282	16.7	4	3321	16.6	**3321**	**16.6**	3320	16.6
481.wrf	4	1483	30.1	1504	29.7	**1498**	**29.8**	4	1493	29.9	1487	30.1	**1489**	**30.0**
482.sphinx3	4	2599	30.0	**2625**	**29.7**	2663	29.3	4	**2409**	**32.4**	2443	31.9	2397	32.5

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
  except for 436.cactusADM at peak.
 OMP_NUM_THREADS set to number of cores
```

Platform Notes

```
Bios settings:
Hardware Prefetcher:          Disabled
Adjacent Cache Line Prefetch: Disabled
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 Express5800/120Rh-1(Intel Xeon E5440),
 the NEC Express5800/120Rj-2(Intel Xeon E5440),
 the Bull NovaScale R440 E1 (Intel Xeon E5440,2.83GHz) and
 the Bull NovaScale R460 E1 (Intel Xeon E5440,2.83GHz) models are electronically equivalent.
 The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon E5440) 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`

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`

Continued on next page

Peak Portability Flags (Continued)

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 -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

Continued on next page

Peak Optimization Flags (Continued)

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

Benchmarks using both Fortran and C:

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.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.xml`

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 19:49:18 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 July 2008.