



SPEC® CFP2006 Result

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Bull SAS

NovaScale R630
(Intel Xeon X5355,2.66GHz)

SPECfp®_rate2006 = 58.3

SPECfp_rate_base2006 = 53.0

CPU2006 license: 20

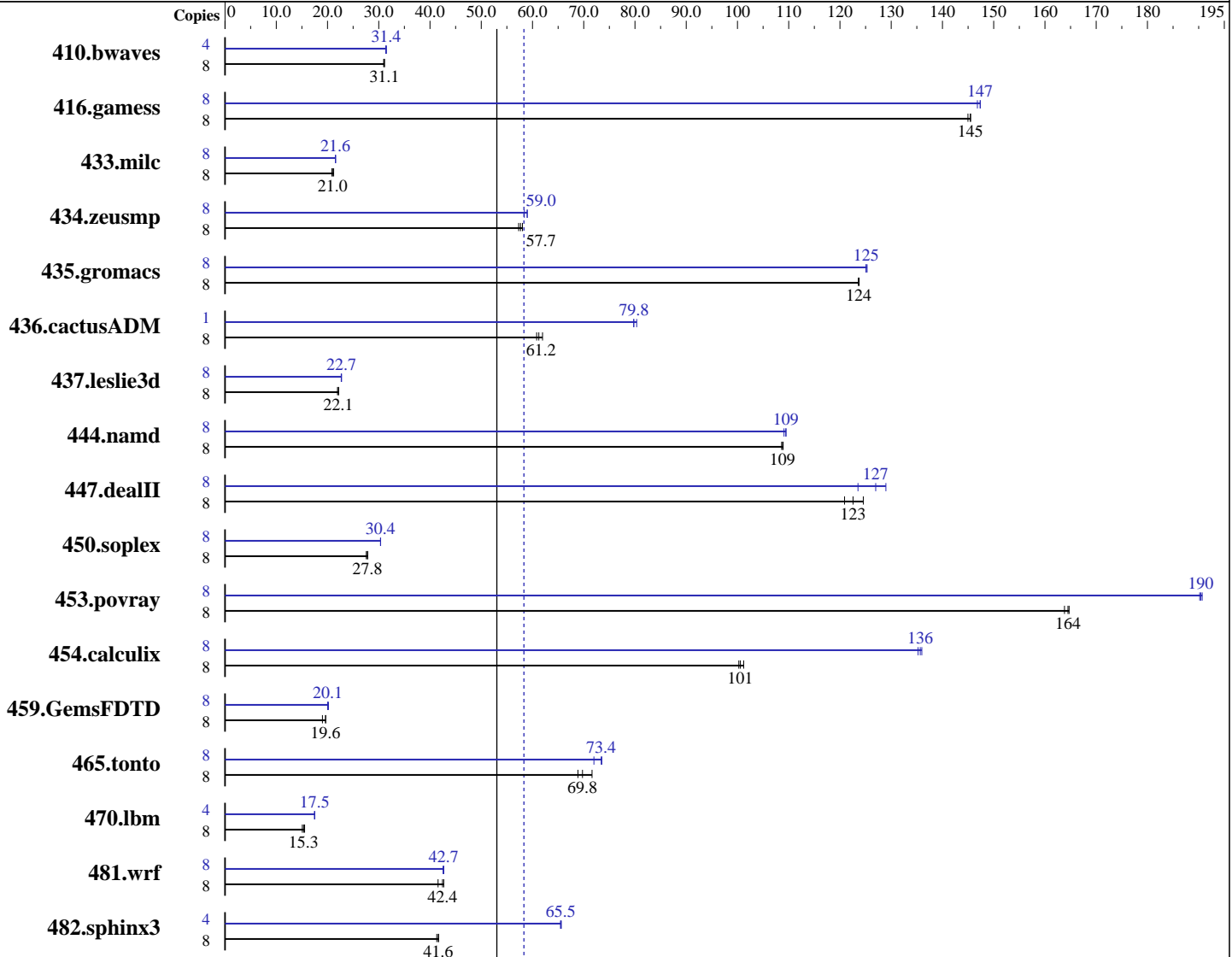
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Apr-2008

Hardware Availability: Oct-2007

Software Availability: Feb-2008



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Hardware

CPU Name: Intel Xeon X5355
 CPU Characteristics: 2.66 GHz, 2x4 MB L2 shared, 1333 MHz bus
 CPU MHz: 2667
 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: Red Hat Enterprise Linux AS release 4 (Update 5), Kernel 2.6.9-55.0.12.ELsmp on an X86_64
 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

Continued on next page



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L3 Cache: None
Other Cache: None
Memory: 12 GB (6x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 2x73.2 GB SAS, 15000RPM, Software RAID Level1
Other Hardware: None

File System: ext3
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
ft Server Control Software 5.0-0231

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	3494	31.1	3497	31.1	3512	31.0	4	1733	31.4	1730	31.4	1726	31.5		
416.gamess	8	1077	145	1077	145	1080	145	8	1067	147	1063	147	1063	147		
433.milc	8	3501	21.0	3521	20.9	3464	21.2	8	3403	21.6	3407	21.6	3409	21.5		
434.zeusmp	8	1263	57.7	1271	57.3	1254	58.0	8	1246	58.4	1235	59.0	1234	59.0		
435.gromacs	8	462	124	462	124	462	124	8	457	125	456	125	457	125		
436.cactusADM	8	1561	61.2	1572	60.8	1543	62.0	1	149	80.3	150	79.8	150	79.8		
437.leslie3d	8	3398	22.1	3426	22.0	3392	22.2	8	3316	22.7	3309	22.7	3310	22.7		
444.namd	8	590	109	589	109	591	109	8	586	109	586	109	588	109		
447.dealII	8	757	121	747	123	735	125	8	710	129	741	124	721	127		
450.soplex	8	2402	27.8	2421	27.6	2395	27.9	8	2199	30.3	2198	30.4	2197	30.4		
453.povray	8	260	164	259	164	258	165	8	224	190	224	190	223	191		
454.calculix	8	652	101	656	101	658	100	8	486	136	485	136	488	135		
459.GemsFDTD	8	4465	19.0	4327	19.6	4322	19.6	8	4206	20.2	4231	20.1	4241	20.0		
465.tonto	8	1099	71.6	1143	68.9	1128	69.8	8	1094	72.0	1072	73.4	1071	73.5		
470.lbm	8	7288	15.1	7167	15.3	7077	15.5	4	3142	17.5	3145	17.5	3140	17.5		
481.wrf	8	2149	41.6	2106	42.4	2093	42.7	8	2094	42.7	2094	42.7	2100	42.5		
482.sphinx3	8	3774	41.3	3747	41.6	3741	41.7	4	1191	65.5	1190	65.5	1188	65.6		

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

This Express5800/320Fc-MR is a fault-tolerant server.
Two modules are installed in this server and each module has "2CPU chips,12GB memory",
so total "4CPU chips,24GB memory" are on this server.
With lockstep technology, these two modules communicate each other
and handle the same instructions at the same time,
then logically the "CPU,Memory" is recognized as "2CPU chips,12GB memory" by the OS.



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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 Express5800/320Fc-MR(Intel Xeon X5355) and the Bull NovaScale R630 (Intel Xeon X5355,2.66GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/320Fc-MR(Intel Xeon X5355) 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

Continued on next page



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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

Continued on next page



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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



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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.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>

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For other inquiries, please contact webmaster@spec.org.

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