SPEC® CFP2006 Result

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Bull SAS

NovaScale B280
(Intel Xeon L5420, 2.50 GHz)

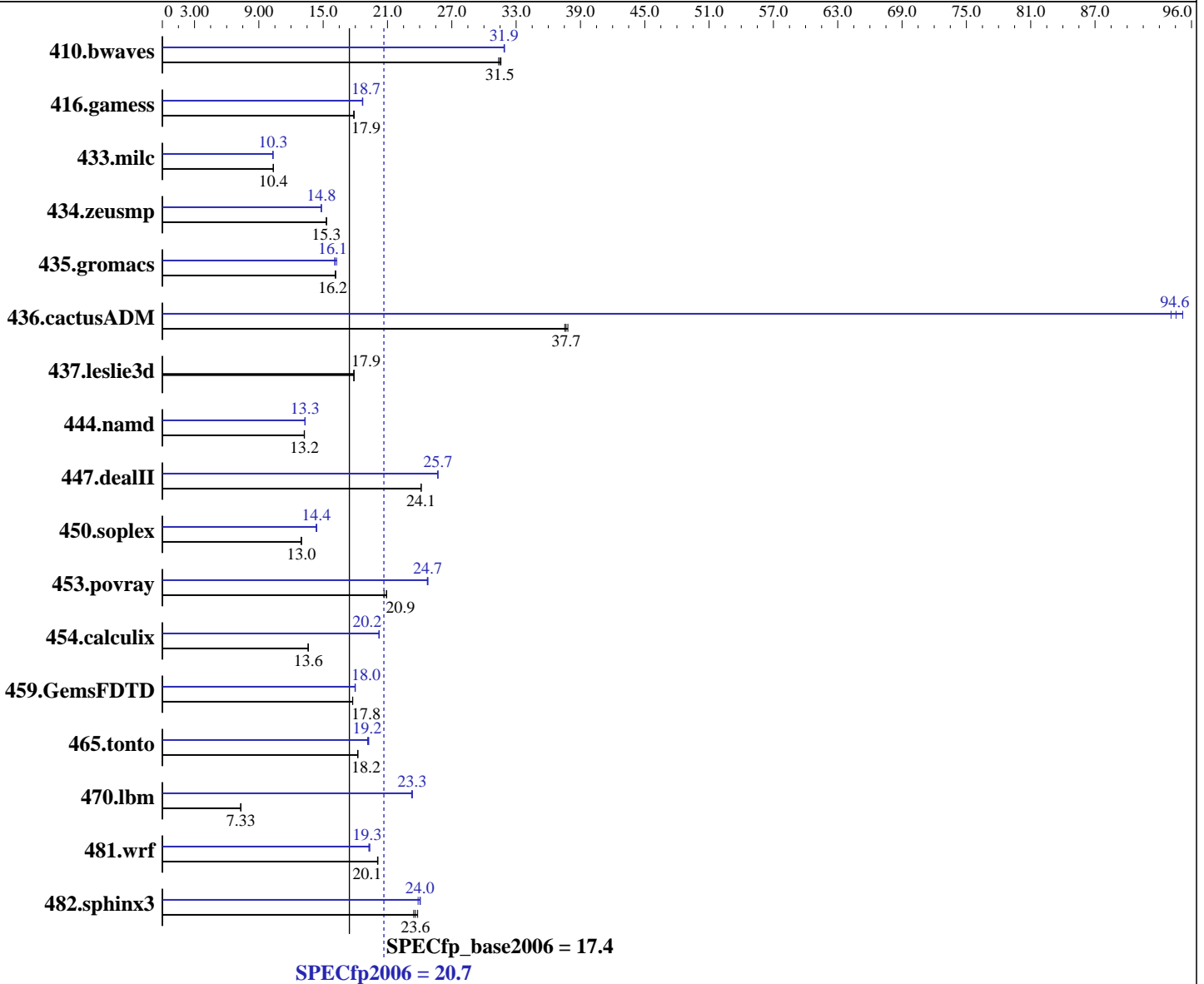$SPECfp^®2006 =$ 20.7

$SPECfp\_base2006 =$ 17.4

CPU2006 license: 20

Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Jul-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007

SPECfp_base2006 = 17.4

SPECfp2006 = 20.7

Benchmark	Base	Peak
410.bwaves	31.5	31.9
416.gamess	17.9	18.7
433.milc	10.4	10.3
434.zeusmp	15.3	14.8
435.gromacs	16.2	16.1
436.cactusADM	37.7	94.6
437.leslie3d	17.9	
444.namd	13.2	13.3
447.dealII	24.1	25.7
450.soplex	13.0	14.4
453.povray	20.9	24.7
454.calculix	13.6	20.2
459.GemsFDTD	17.8	18.0
465.tonto	18.2	19.2
470.lbm	7.33	23.3
481.wrf	20.1	19.3
482.sphinx3	23.6	24.0

Hardware

CPU Name: Intel Xeon L5420
CPU Characteristics: 1333 MHz system bus
CPU MHz: 2500
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: 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 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
Auto Parallel: Yes
File System: ext2
System State: Run level 3 (multi-user)
Base Pointers: 64-bit

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L3 Cache:	None	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.17.50.0.15
Memory:	16 GB (8x2 GB) FB-DIMM PC2-5300F ECC CL5		
Disk Subsystem:	1x73 GB SAS, 10000 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	433	31.4	**432**	**31.5**	430	31.6	426	31.9	**426**	**31.9**	426	31.9
416.gamess	1096	17.9	**1096**	**17.9**	1094	17.9	1049	18.7	**1048**	**18.7**	1048	18.7
433.milc	886	10.4	**887**	**10.4**	887	10.3	890	10.3	**889**	**10.3**	889	10.3
434.zeusmp	595	15.3	594	15.3	**594**	**15.3**	614	14.8	**614**	**14.8**	614	14.8
435.gromacs	442	16.2	**442**	**16.2**	443	16.1	439	16.3	**443**	**16.1**	444	16.1
436.cactusADM	316	37.8	**317**	**37.7**	318	37.5	**126**	**94.6**	126	95.2	127	94.1
437.leslie3d	526	17.9	**526**	**17.9**	526	17.9	526	17.9	**526**	**17.9**	526	17.9
444.namd	605	13.3	606	13.2	**605**	**13.2**	602	13.3	604	13.3	**602**	**13.3**
447.dealII	474	24.1	474	24.1	**474**	**24.1**	445	25.7	445	25.7	**445**	**25.7**
450.soplex	643	13.0	**643**	**13.0**	644	12.9	**581**	**14.4**	579	14.4	581	14.4
453.povray	**255**	**20.9**	254	20.9	257	20.7	215	24.8	215	24.7	**215**	**24.7**
454.calculix	**606**	**13.6**	606	13.6	607	13.6	**408**	**20.2**	408	20.2	408	20.2
459.GemsFDTD	598	17.7	**598**	**17.8**	597	17.8	**590**	**18.0**	590	18.0	590	18.0
465.tonto	**540**	**18.2**	539	18.2	540	18.2	511	19.3	**512**	**19.2**	514	19.1
470.lbm	**1876**	**7.33**	1882	7.30	1875	7.33	589	23.3	591	23.2	**590**	**23.3**
481.wrf	557	20.1	**556**	**20.1**	556	20.1	578	19.3	**578**	**19.3**	580	19.3
482.sphinx3	818	23.8	**826**	**23.6**	831	23.5	810	24.1	**811**	**24.0**	817	23.9

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
    OMP_NUM_THREADS set to number of cores
    KMP_AFFINITY set to physical,0
    KMP_STACKSIZE set to 200M

General Notes

    All benchmarks compiled in 64-bit mode except 450.soplex,
    470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
    BIOS settings :
    Hardware Prefetcher :   Enabled
    Adjacent Cache-Line Prefetch :   Enabled

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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 -parallel

C++ benchmarks:
        -fast -parallel

Fortran benchmarks:
        -fast -parallel

Benchmarks using both Fortran and C:
        -fast -parallel

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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:
```
ifort
```

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`
    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 -fno-alias`
           `-auto-ilp32`

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

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Peak Optimization Flags (Continued)

     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 -parallel`

     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: basepeak = yes

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

     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 -parallel -prefetch -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_fp_flags.20090713.00.xml`

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

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