



SPEC® CINT2006 Result

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Bull SAS

NovaScale T860 E1
(Intel Xeon E5410, 2.33 GHz)

SPECint®2006 = 21.6

SPECint_base2006 = 18.9

CPU2006 license: 20

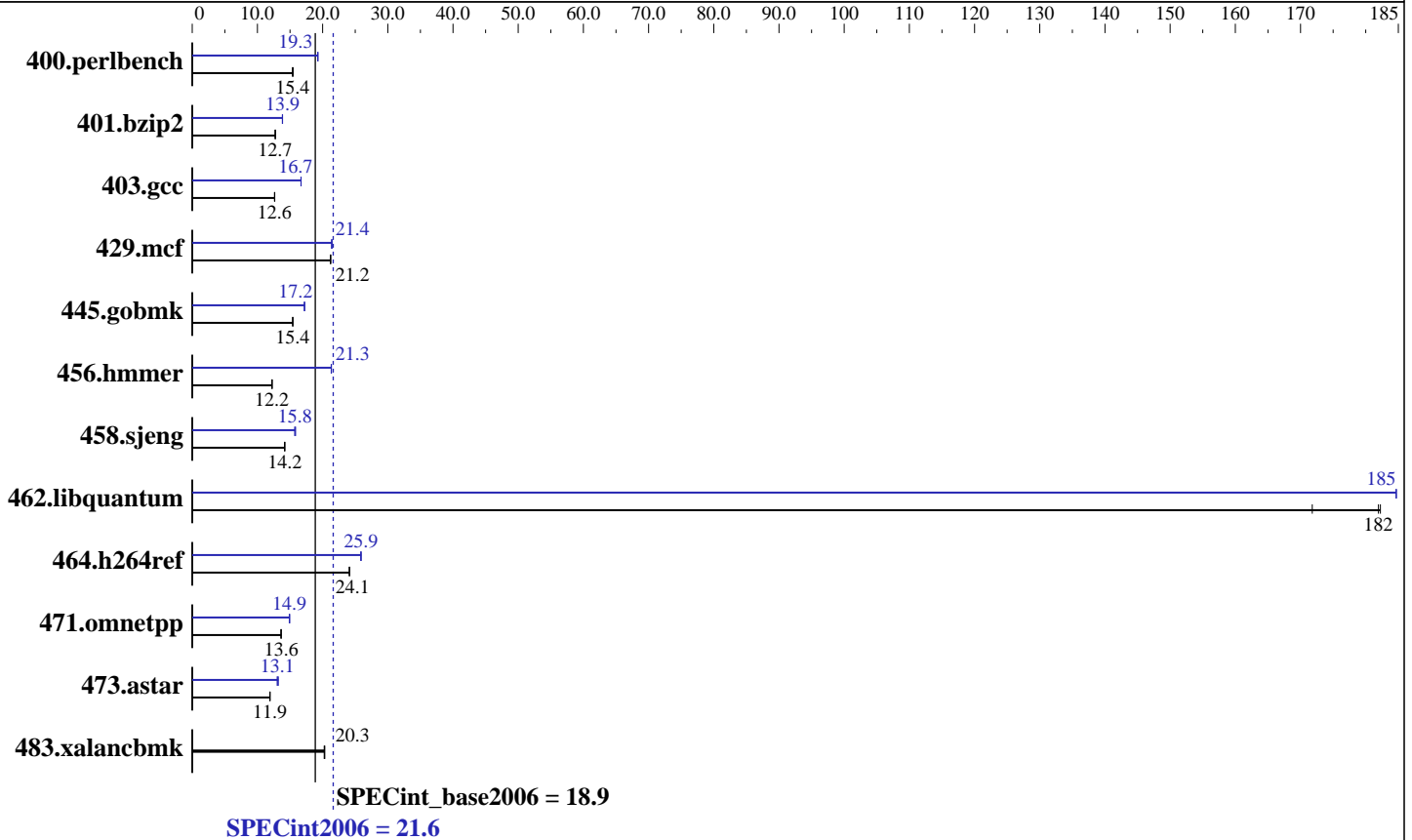
Test sponsor: Bull SAS

Tested by: Bull SAS

Test date: Jul-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5410
 CPU Characteristics: 1333 MHz system 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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores
 L3 Cache: None
 Other Cache: None
 Memory: 16 GB (8x2 GB) FB-DIMM PC2-5300F ECC CL5
 Disk Subsystem: 1x73 GB SAS, 15000 RPM
 Other Hardware: None

Software

Operating System: SUSE LINUX Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
 Auto Parallel: Yes
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: Binutils 2.17.50.0.15
 SmartHeap library V8.1



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Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|----------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 632 | 15.5 | 634 | 15.4 | 635 | 15.4 | <u>507</u> | <u>19.3</u> | 507 | 19.3 | 508 | 19.2 |
| 401.bzip2 | 759 | 12.7 | 756 | 12.8 | <u>758</u> | <u>12.7</u> | <u>697</u> | <u>13.9</u> | 698 | 13.8 | 697 | 13.9 |
| 403.gcc | 636 | 12.7 | 638 | 12.6 | 637 | 12.6 | <u>482</u> | <u>16.7</u> | 482 | 16.7 | 483 | 16.7 |
| 429.mcf | 430 | 21.2 | 430 | 21.2 | 429 | 21.3 | 426 | 21.4 | <u>426</u> | <u>21.4</u> | 427 | 21.4 |
| 445.gobmk | 680 | 15.4 | 680 | 15.4 | 680 | 15.4 | <u>609</u> | <u>17.2</u> | 609 | 17.2 | 610 | 17.2 |
| 456.hammer | 763 | 12.2 | 761 | 12.3 | <u>762</u> | <u>12.2</u> | 438 | 21.3 | <u>437</u> | <u>21.3</u> | 437 | 21.4 |
| 458.sjeng | 852 | 14.2 | 855 | 14.2 | 852 | 14.2 | 769 | 15.7 | 768 | 15.8 | 763 | 15.9 |
| 462.libquantum | 114 | 182 | 121 | 172 | 114 | 182 | 112 | 185 | 112 | 185 | 112 | 185 |
| 464.h264ref | 918 | 24.1 | 917 | 24.1 | 918 | 24.1 | 854 | 25.9 | 856 | 25.9 | 855 | 25.9 |
| 471.omnetpp | 458 | 13.6 | 458 | 13.6 | 459 | 13.6 | <u>419</u> | <u>14.9</u> | 420 | 14.9 | 418 | 14.9 |
| 473.astar | 589 | 11.9 | 589 | 11.9 | 589 | 11.9 | 538 | 13.0 | 531 | 13.2 | 537 | 13.1 |
| 483.xalancbmk | 340 | 20.3 | 340 | 20.3 | 341 | 20.2 | 340 | 20.3 | 340 | 20.3 | 341 | 20.2 |

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 null
```

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hammer, for peak, are compiled in 64-bit mode

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page



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Base Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-fast -vec-guard-write -parallel -par-runtime-control

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/spec/cpu2006/lib -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX



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Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo
-no-prec-div -ansi-alias

456.hmmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive
-auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch
-opt-streaming-stores always -vec-guard-write
-opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
-no-prec-div -ansi-alias -opt-ra-region-strategy=block
-Wl,-z,muldefs -L/spec/cpu2006/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine
-Wl,-z,muldefs -L/spec/cpu2006/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca



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The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.xml

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