# SPEC® CINT2006 Result

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## Bull SAS

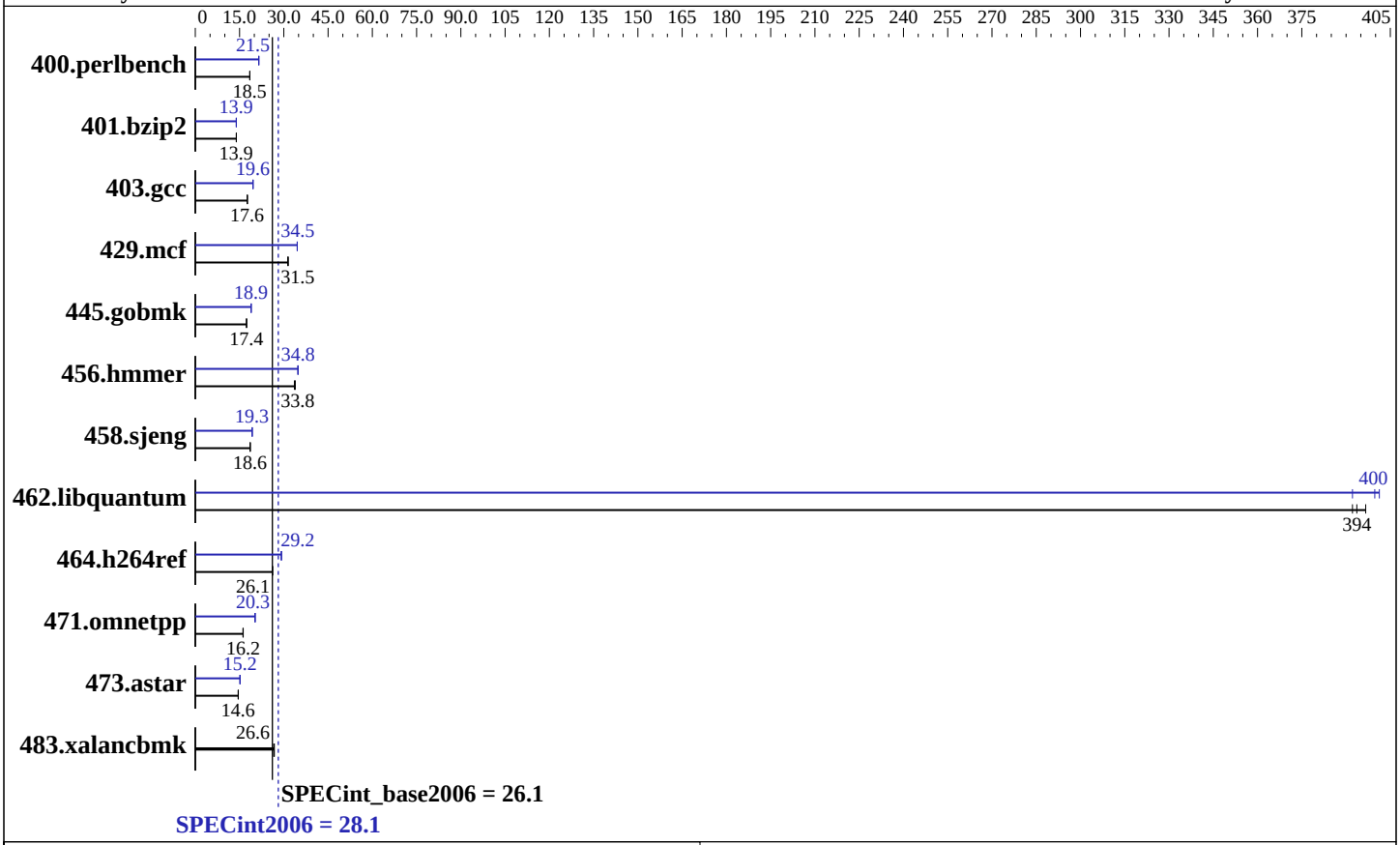
NovaScale T840 F2 (Intel Xeon L5630, 2.13 GHz)

SPECint®2006 = 28.1

SPECint_base2006 = 26.1

**CPU2006 license:** 20
**Test sponsor:** Bull SAS
**Tested by:** Dell Inc.

**Test date:** Jun-2010
**Hardware Availability:** Mar-2010
**Software Availability:** Dec-2009




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon L5630 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.40 GHz |
| CPU MHz: | 2133 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 12 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 48 GB (12 x 4 GB DDR3-1333 DR RDIMM, CL9, ECC, downclocked to 1066 MHz) |
| Disk Subsystem: | 1 x 146 GB 15000 RPM SAS |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp |
| Compiler: | Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap 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 | 529 | 18.5 | **529** | **18.5** | 529 | 18.5 | **454** | **21.5** | 453 | 21.6 | 455 | 21.5 |
| 401.bzip2 | 693 | 13.9 | **694** | **13.9** | 694 | 13.9 | 696 | 13.9 | 693 | 13.9 | **694** | **13.9** |
| 403.gcc | **457** | **17.6** | 456 | 17.7 | 458 | 17.6 | 412 | 19.6 | **412** | **19.6** | 411 | 19.6 |
| 429.mcf | 290 | 31.5 | **290** | **31.5** | 291 | 31.3 | **264** | **34.5** | 264 | 34.6 | 264 | 34.5 |
| 445.gobmk | 604 | 17.4 | **604** | **17.4** | 605 | 17.3 | 554 | 18.9 | 554 | 18.9 | **554** | **18.9** |
| 456.hmmer | 278 | 33.6 | 276 | 33.9 | **276** | **33.8** | **268** | **34.8** | 268 | 34.8 | 268 | 34.8 |
| 458.sjeng | 650 | 18.6 | **650** | **18.6** | 651 | 18.6 | **628** | **19.3** | 627 | 19.3 | 628 | 19.3 |
| 462.libquantum | 52.8 | 392 | 52.2 | 397 | **52.6** | **394** | 52.8 | 392 | 51.6 | 401 | **51.8** | **400** |
| 464.h264ref | 846 | 26.2 | **847** | **26.1** | 847 | 26.1 | 758 | 29.2 | 759 | 29.2 | **758** | **29.2** |
| 471.omnetpp | 387 | 16.1 | **385** | **16.2** | 385 | 16.2 | 309 | 20.2 | **308** | **20.3** | 308 | 20.3 |
| 473.astar | 481 | 14.6 | 484 | 14.5 | **482** | **14.6** | 465 | 15.1 | 462 | 15.2 | **463** | **15.2** |
| 483.xalancbmk | 258 | 26.8 | **259** | **26.6** | 259 | 26.6 | 258 | 26.8 | **259** | **26.6** | 259 | 26.6 |

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

## Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
Data Reuse = Disabled (Default = Enabled)

## General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
The Dell PowerEdge T610 and
the Bull NovaScale T840 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge T610 model.

## Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32

429.mcf: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):
icpc -m64

Continued on next page

## Peak Compiler Invocation (Continued)

471.omnetpp: icpc -m32

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -ansi-alias -opt-prefetch

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -static(pass 2) -prof-use(pass 2)
-auto-ilp32 -opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
-ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
-ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -unroll4

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel
-opt-prefetch -par-schedule-static=32768 -ansi-alias

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -unroll2 -ansi-alias

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## Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml


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