# SPEC® CINT2006 Result

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## Bull SAS

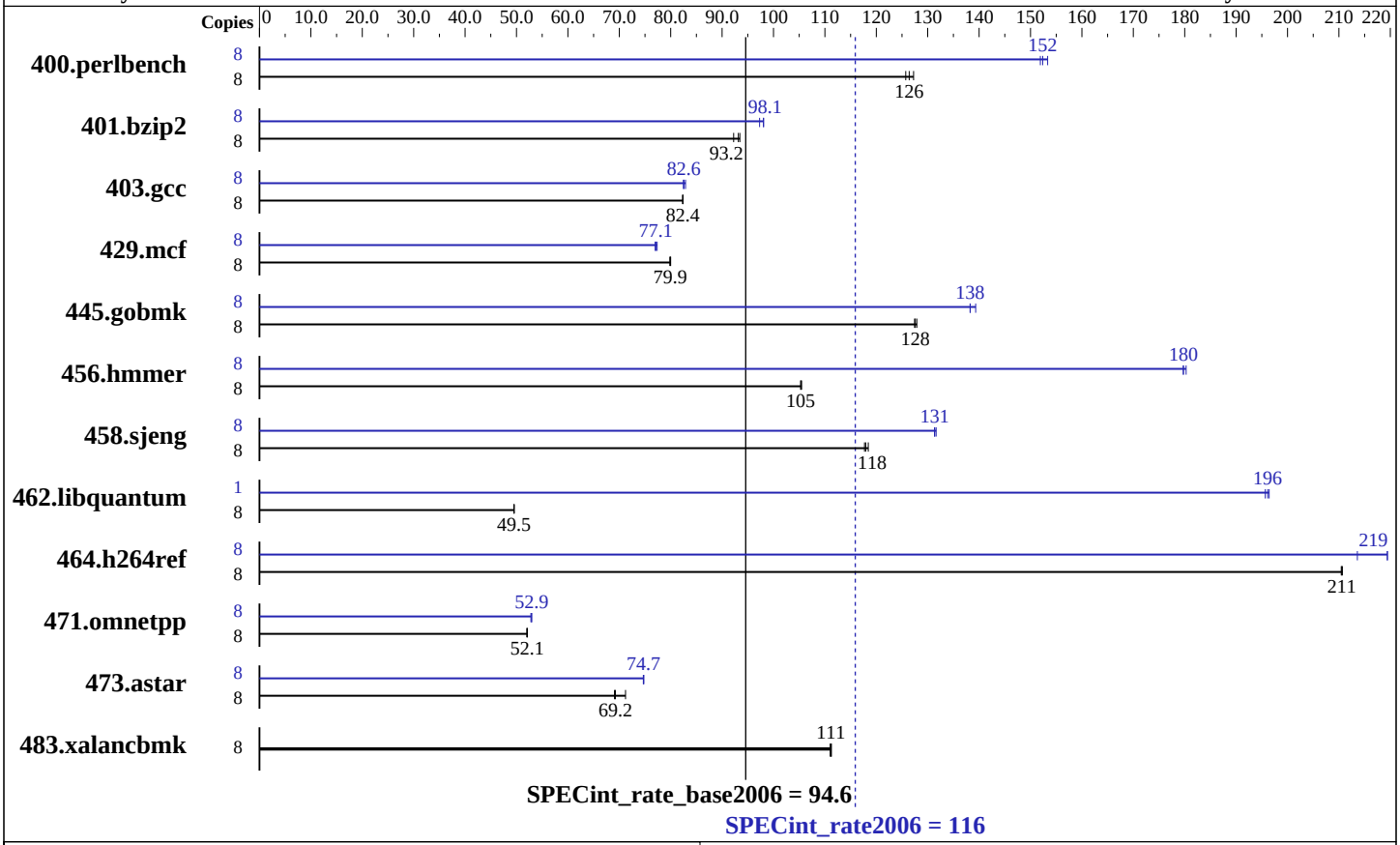
NovaScale B280
(Intel Xeon L5420, 2.50 GHz)

SPECint®_rate2006 = 116

SPECint_rate_base2006 = 94.6

**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 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 |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB) FB-DIMM PC2-5300F ECC CL5 |
| Disk Subsystem: | 1x73 GB SAS, 10000 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<br>SmartHeap library V8.1 |

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 8 | 622 | 126 | 614 | 127 | **618** | **126** | 8 | 510 | 153 | 514 | 152 | **513** | **152** |
| 401.bzip2 | 8 | **829** | **93.2** | 826 | 93.5 | 837 | 92.2 | 8 | 793 | 97.3 | **787** | **98.1** | 787 | 98.1 |
| 403.gcc | 8 | **782** | **82.4** | 782 | 82.4 | 782 | 82.3 | 8 | 777 | 82.9 | 781 | 82.5 | **780** | **82.6** |
| 429.mcf | 8 | 914 | 79.8 | **913** | **79.9** | 912 | 80.0 | 8 | **946** | **77.1** | 948 | 77.0 | 943 | 77.4 |
| 445.gobmk | 8 | **658** | **128** | 656 | 128 | 658 | 127 | 8 | 607 | 138 | **607** | **138** | 602 | 139 |
| 456.hmmer | 8 | 709 | 105 | **709** | **105** | 708 | 105 | 8 | **415** | **180** | 414 | 180 | 415 | 180 |
| 458.sjeng | 8 | **821** | **118** | 817 | 118 | 822 | 118 | 8 | 735 | 132 | 737 | 131 | **737** | **131** |
| 462.libquantum | 8 | 3344 | 49.6 | 3350 | 49.5 | **3348** | **49.5** | 1 | **106** | **196** | 105 | 196 | 106 | 196 |
| 464.h264ref | 8 | **841** | **211** | 841 | 210 | 840 | 211 | 8 | 807 | 219 | **807** | **219** | 829 | 214 |
| 471.omnetpp | 8 | 961 | 52.0 | **960** | **52.1** | 959 | 52.1 | 8 | 947 | 52.8 | 944 | 52.9 | **944** | **52.9** |
| 473.astar | 8 | **811** | **69.2** | 813 | 69.1 | 789 | 71.2 | 8 | 752 | 74.7 | 751 | 74.8 | **752** | **74.7** |
| 483.xalancbmk | 8 | 496 | 111 | 497 | 111 | **496** | **111** | 8 | 496 | 111 | 497 | 111 | **496** | **111** |

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 64M
```

## General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
BIOS settings :
Hardware Prefetcher :                Enabled
Adjacent Cache-Line Prefetch :       Disabled
```

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:
-fast -inline-calloc -opt-malloc-options=3

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

Continued on next page

## Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

## 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

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.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

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:

Continued on next page

## Peak Other Flags (Continued)

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_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_int_flags.20090713.00.xml`


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