# SPEC® CINT2006 Result

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## Bull SAS

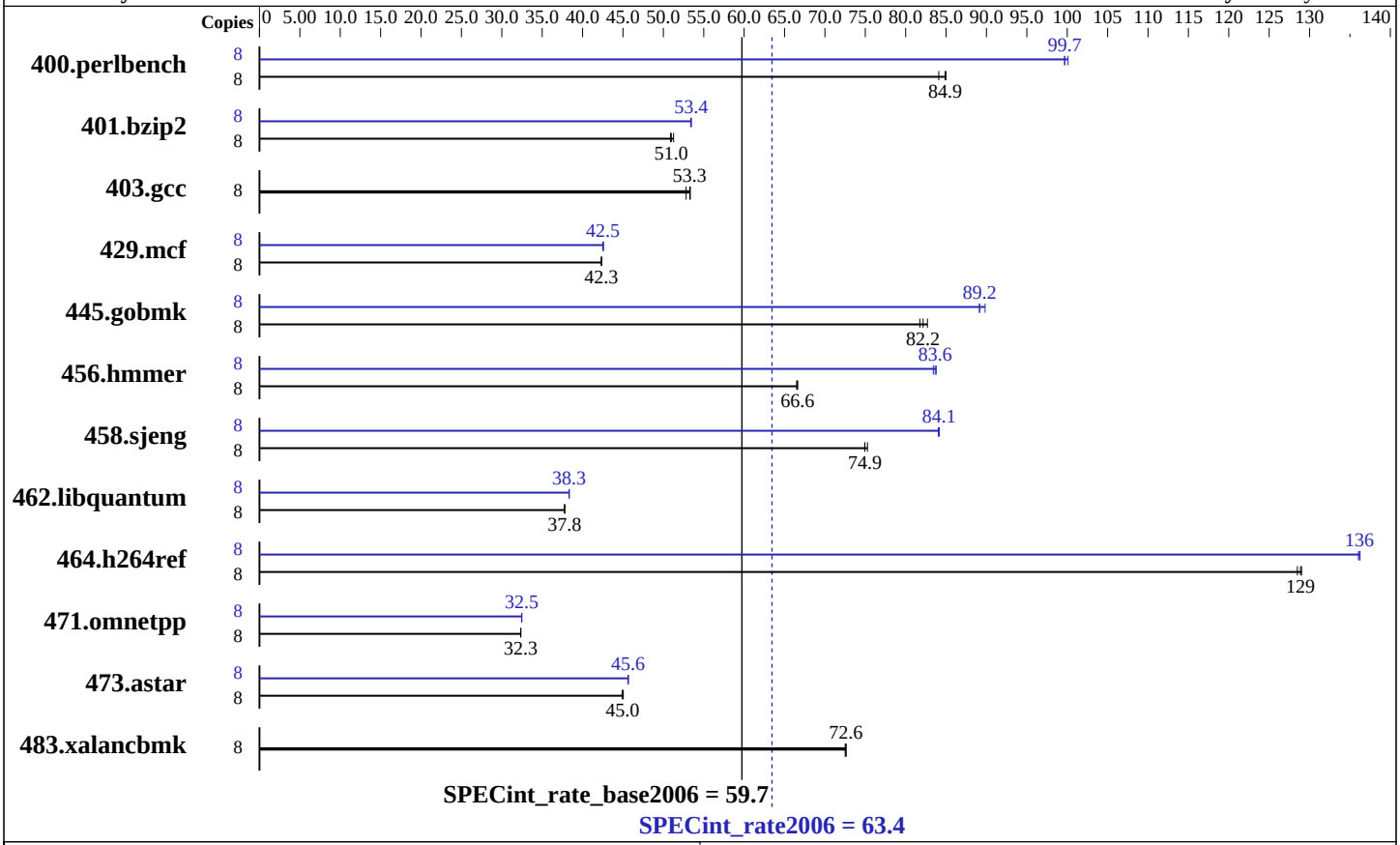
NovaScale R460
(Intel Xeon processor E5310,1.60GHz)

SPECint®_rate2006 = 63.4

SPECint_rate_base2006 = 59.7

**CPU2006 license:** 20
**Test sponsor:** Bull SAS
**Tested by:** Bull SAS

**Test date:** Jul-2007
**Hardware Availability:** May-2007
**Software Availability:** May-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5310 |
| CPU Characteristics: | 1.60 GHz, 8 MB L2, 1066 MHz system bus |
| CPU MHz: | 1600 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 1 to 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 |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 12 GB (12x1 GB) FB-DIMM PC2-4200F ECC CL4 |
| Disk Subsystem: | 1x73 GB SAS, 15000 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE LINUX Enterprise Server 10<br>Kernel 2.6.16.21-0.8-smp for x86_64 |
| Compiler: | Intel C++ Compiler for Linux32 version 10.0<br>Build 20070426 Package ID: l_cc_p_10.0.023 |
| Auto Parallel: | No |
| File System: | ext2 |
| System State: | Multi-user run level 3 |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | SmartHeap library V8.1<br>Binutils 2.17.50.0.15 |

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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 | 920 | 85.0 | 929 | 84.1 | **921** | **84.9** | 8 | **784** | **99.7** | 781 | 100 | 784 | 99.7 |
| 401.bzip2 | 8 | 1517 | 50.9 | **1514** | **51.0** | 1506 | 51.3 | 8 | 1444 | 53.5 | 1446 | 53.4 | **1444** | **53.4** |
| 403.gcc | 8 | 1207 | 53.3 | **1209** | **53.3** | 1219 | 52.8 | 8 | 1207 | 53.3 | **1209** | **53.3** | 1219 | 52.8 |
| 429.mcf | 8 | 1724 | 42.3 | 1723 | 42.3 | **1723** | **42.3** | 8 | 1713 | 42.6 | 1717 | 42.5 | **1715** | **42.5** |
| 445.gobmk | 8 | 1015 | 82.7 | **1021** | **82.2** | 1026 | 81.8 | 8 | 942 | 89.1 | 934 | 89.8 | **941** | **89.2** |
| 456.hmmer | 8 | 1122 | 66.5 | 1121 | 66.6 | **1121** | **66.6** | 8 | **892** | **83.6** | 891 | 83.8 | 895 | 83.4 |
| 458.sjeng | 8 | 1292 | 74.9 | **1292** | **74.9** | 1286 | 75.3 | 8 | **1150** | **84.1** | 1150 | 84.2 | 1152 | 84.0 |
| 462.libquantum | 8 | 4390 | 37.8 | 4385 | 37.8 | **4386** | **37.8** | 8 | **4324** | **38.3** | 4325 | 38.3 | 4323 | 38.3 |
| 464.h264ref | 8 | 1372 | 129 | 1378 | 128 | **1374** | **129** | 8 | 1299 | 136 | 1301 | 136 | **1300** | **136** |
| 471.omnetpp | 8 | 1545 | 32.4 | 1547 | 32.3 | **1546** | **32.3** | 8 | 1540 | 32.5 | **1540** | **32.5** | 1540 | 32.5 |
| 473.astar | 8 | 1251 | 44.9 | 1247 | 45.0 | **1249** | **45.0** | 8 | 1230 | 45.7 | 1231 | 45.6 | **1230** | **45.6** |
| 483.xalancbmk | 8 | 761 | 72.5 | 760 | 72.6 | **760** | **72.6** | 8 | 761 | 72.5 | 760 | 72.6 | **760** | **72.6** |

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

## General Notes

```
The NovaScale R440 and the NovaScale R460 models are
electronically equivalent.
The results have been measured on a NovaScale R460 model.
```

## 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

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -ansi-alias
-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/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/include

456.hmmer: /opt/intel/cce/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/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

403.gcc: basepeak = yes

429.mcf: -fast -prefetch

445.gobmk: -prof_gen(pass 1) -prof_use(pass 2) -xT -O2 -ipo -no-prec_div -ansi-alias

456.hmmer: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll2 -ansi-alias

458.sjeng: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4

462.libquantum: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof_gen(pass 1) -prof_use(pass 2) -xT -O3 -ipo -no-prec_div -ansi-alias -L/spec/cpu2006/lib -lsmartheap

473.astar: Same as 471.omnetpp

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/EM64T_Intel100_flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.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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