# SPEC® CINT2006 Result

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## Bull SAS

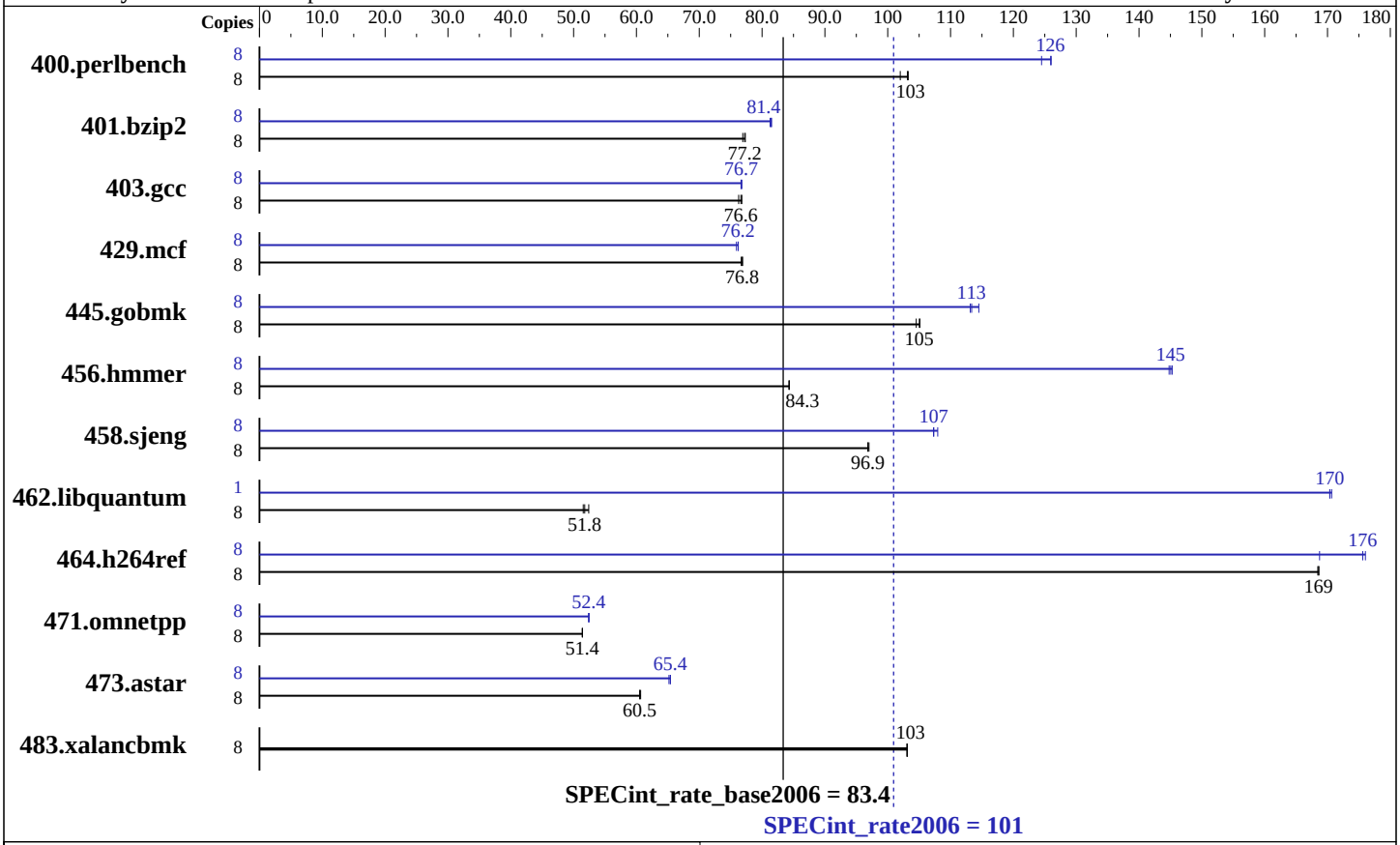
NovaScale T860 E1
(Intel Xeon E5405, 2.00GHz)

SPECint®_rate2006 = 101

SPECint_rate_base2006 = 83.4

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

**Test date:** Mar-2008
**Hardware Availability:** Feb-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5405 |
| CPU Characteristics: | 2.00 GHz, 2x6 MB L2 shared, 1333 MHz bus |
| CPU MHz: | 2000 |
| 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: | 12 GB (12x1 GB PC2-5300F, 2 rank, CL5-5-5, ECC) |
| Disk Subsystem: | 1x73.2 GB SAS, 15000RPM |
| 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 for Linux32 and Linux64 version 10.1 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: | MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 2.17 |

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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 | **758** | **103** | 757 | 103 | 766 | 102 | 8 | 628 | 124 | 620 | 126 | **621** | **126** |
| 401.bzip2 | 8 | 1004 | 76.9 | **1000** | **77.2** | 998 | 77.3 | 8 | 950 | 81.3 | **948** | **81.4** | 947 | 81.5 |
| 403.gcc | 8 | 839 | 76.8 | **840** | **76.6** | 844 | 76.3 | 8 | 839 | 76.8 | **840** | **76.7** | 840 | 76.6 |
| 429.mcf | 8 | **950** | **76.8** | 952 | 76.7 | 949 | 76.9 | 8 | 961 | 75.9 | 957 | 76.2 | **958** | **76.2** |
| 445.gobmk | 8 | **799** | **105** | 803 | 105 | 798 | 105 | 8 | 733 | 114 | 742 | 113 | **740** | **113** |
| 456.hmmer | 8 | 885 | 84.3 | 885 | 84.3 | **885** | **84.3** | 8 | 516 | 145 | **515** | **145** | 514 | 145 |
| 458.sjeng | 8 | **999** | **96.9** | 999 | 96.8 | 998 | 97.0 | 8 | 897 | 108 | 902 | 107 | **902** | **107** |
| 462.libquantum | 8 | 3163 | 52.4 | 3217 | 51.5 | **3202** | **51.8** | 1 | 122 | 170 | **122** | **170** | 121 | 171 |
| 464.h264ref | 8 | **1050** | **169** | 1051 | 168 | 1050 | 169 | 8 | **1008** | **176** | 1049 | 169 | 1006 | 176 |
| 471.omnetpp | 8 | 973 | 51.4 | **973** | **51.4** | 973 | 51.4 | 8 | 953 | 52.4 | 954 | 52.4 | **953** | **52.4** |
| 473.astar | 8 | **928** | **60.5** | 926 | 60.7 | 928 | 60.5 | 8 | **859** | **65.4** | 859 | 65.4 | 862 | 65.2 |
| 483.xalancbmk | 8 | **536** | **103** | 535 | 103 | 536 | 103 | 8 | **536** | **103** | 535 | 103 | 536 | 103 |

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
```

## Platform Notes

```
Bios settings:
Intel SpeedStep Technology: Disabled
```

## General Notes

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

 The NEC Express5800/120Lj(Intel Xeon E5405) and
 the Bull NovaScale T860 E1(Intel Xeon E5405,2.00GHz) models are electronically equivalent.
 The results have been measured on a NEC Express5800/120Lj(Intel Xeon E5405) 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 -inline-calloc -opt-malloc-options=3

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/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/opt/SmartHeap_8.1/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/opt/SmartHeap_8.1/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/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.20090713.01.xml`


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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 16:49:51 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 29 April 2008.