# SPEC® CINT2006 Result

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## Bull SAS

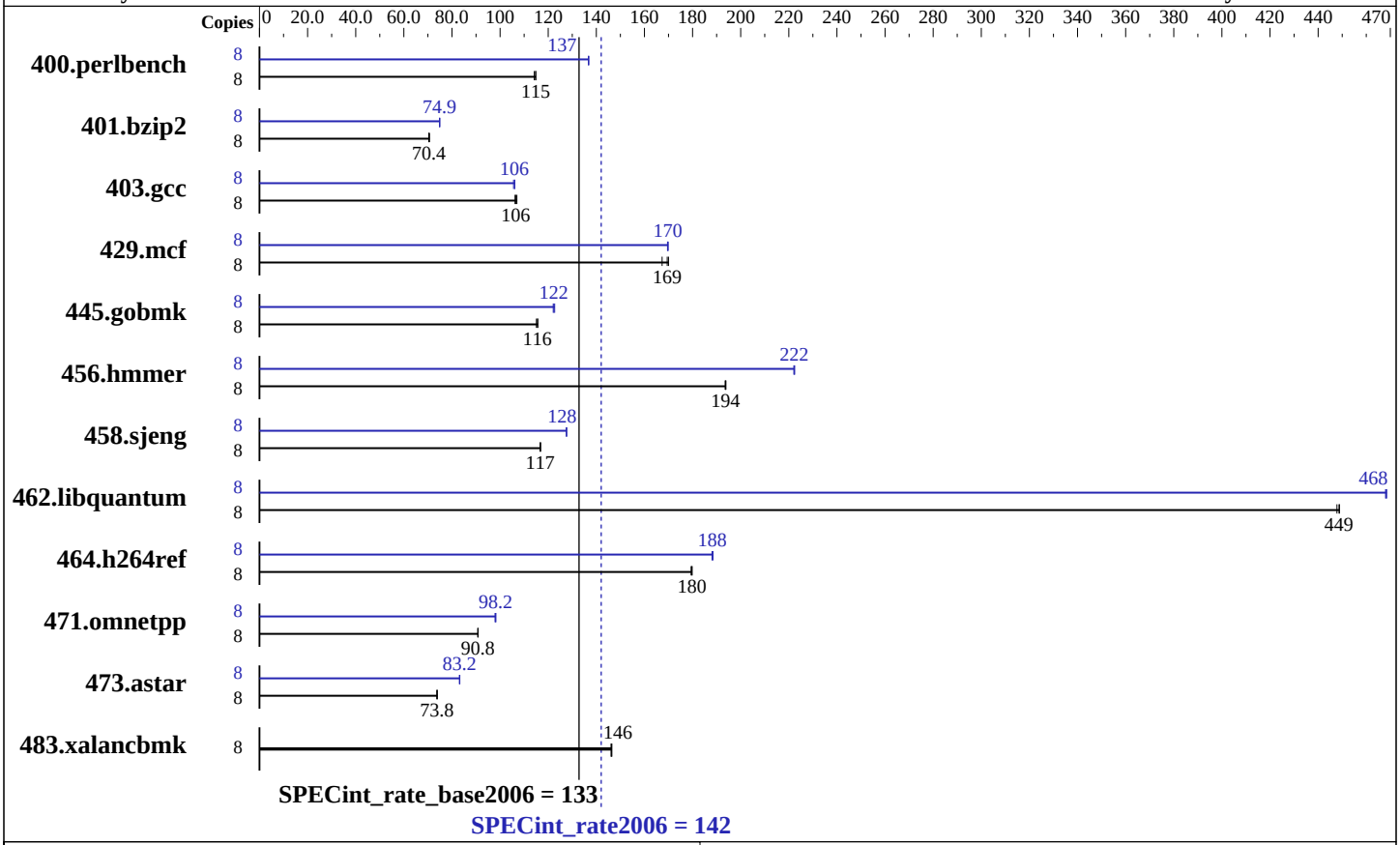
NovaScale R440 F2
(Intel Xeon E5504, 2.00 GHz)

SPECint®_rate2006 = 142

SPECint_rate_base2006 = 133

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

**Test date:** May-2010
**Hardware Availability:** Jan-2010
**Software Availability:** Dec-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5504 |
| CPU Characteristics: | |
| 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: | 256 KB I+D on chip per core |
| L3 Cache: | 4 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 48 GB (12 x 4 GB PC3-10600R, 2 Rank, CL9-9-9, ECC, running at 800 MHz) |
| Disk Subsystem: | 1 x 73 GB SAS, 10000 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default |
| 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: | No |
| File System: | ext3 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap 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 | **681** | **115** | 681 | 115 | 684 | 114 | 8 | **571** | **137** | 571 | 137 | 572 | 137 |
| 401.bzip2 | 8 | 1092 | 70.7 | 1097 | 70.4 | **1097** | **70.4** | 8 | 1032 | 74.8 | 1030 | 74.9 | **1031** | **74.9** |
| 403.gcc | 8 | 606 | 106 | **605** | **106** | 602 | 107 | 8 | **607** | **106** | 610 | 106 | 607 | 106 |
| 429.mcf | 8 | 436 | 167 | **431** | **169** | 429 | 170 | 8 | 430 | 170 | 430 | 170 | **430** | **170** |
| 445.gobmk | 8 | **726** | **116** | 729 | 115 | 725 | 116 | 8 | **686** | **122** | 687 | 122 | 684 | 123 |
| 456.hmmer | 8 | 386 | 194 | **385** | **194** | 385 | 194 | 8 | 336 | 222 | 336 | 222 | **336** | **222** |
| 458.sjeng | 8 | 829 | 117 | **829** | **117** | 829 | 117 | 8 | 758 | 128 | **759** | **128** | 759 | 128 |
| 462.libquantum | 8 | 370 | 448 | 369 | 449 | **369** | **449** | 8 | **354** | **468** | 354 | 468 | 354 | 468 |
| 464.h264ref | 8 | **985** | **180** | 985 | 180 | 987 | 179 | 8 | 939 | 188 | 941 | 188 | **940** | **188** |
| 471.omnetpp | 8 | **551** | **90.8** | 551 | 90.8 | 551 | 90.8 | 8 | 509 | 98.2 | 511 | 97.9 | **509** | **98.2** |
| 473.astar | 8 | 760 | 73.9 | **761** | **73.8** | 762 | 73.7 | 8 | 676 | 83.1 | 674 | 83.3 | **675** | **83.2** |
| 483.xalancbmk | 8 | **377** | **146** | 378 | 146 | 377 | 146 | 8 | **377** | **146** | 378 | 146 | 377 | 146 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

## General Notes

```
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
The Dell PowerEdge R610 and
the Bull NovaScale R440 F2 models are electronically equivalent.
The results have been measured on a Bull NovaScale R440 F2 model.
```

# Base Compiler Invocation

C benchmarks:

```
icc  -m32
```

C++ benchmarks:

```
icpc -m32
```

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -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/libic11.1-32bit -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

462.libquantum: icc -m64

C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64

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## Peak Portability Flags (Continued)

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_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

401.bzip2: -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) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static

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 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-prefetch

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

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

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# Peak Optimization Flags (Continued)

473.astar (continued):
`-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.20100511.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.20100511.xml`


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