# SPEC® CINT2006 Result
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## Bull SAS

## BL265 (Intel Xeon X5670, 2.93 GHz)

SPECint®_rate2006 = 387

SPECint_rate_base2006 = 361
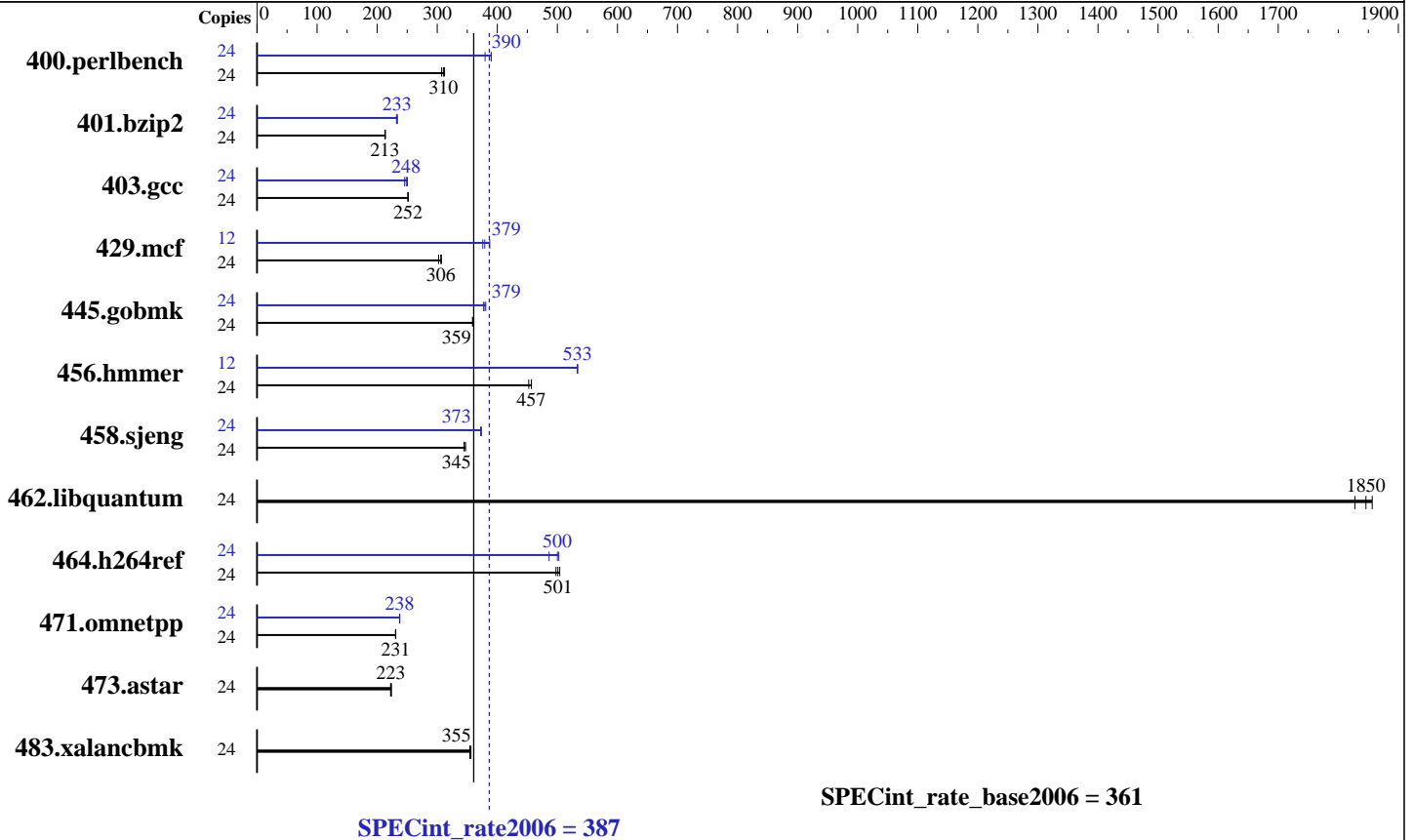
**CPU2006 license:** 20
**Test sponsor:** Bull SAS
**Tested by:** Bull SAS

**Test date:** Jan-2011
**Hardware Availability:** May-2010
**Software Availability:** Nov-2010



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## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5670 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.33 GHz |
| CPU MHz: | 2933 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 6 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 2Rx4 PC3-10600R-9, ECC) |
| Disk Subsystem: | 1 x 73 GB SAS, 10000 RPM |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7-default |
| Compiler: | Intel C++ Compiler XE for applications running on IA-32 Version 12.0.1.116 Build 20101116 |
| 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 V9.01 |

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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 | 24 | **756** | **310** | 751 | 312 | 763 | 307 | 24 | 618 | 380 | **602** | **390** | 601 | 390 |
| 401.bzip2 | 24 | 1083 | 214 | 1088 | 213 | **1087** | **213** | 24 | 998 | 232 | 991 | 234 | **994** | **233** |
| 403.gcc | 24 | 768 | 252 | 769 | 251 | **768** | **252** | 24 | 772 | 250 | **778** | **248** | 786 | 246 |
| 429.mcf | 24 | 724 | 302 | **715** | **306** | 713 | 307 | 12 | 291 | 376 | **289** | **379** | 282 | 387 |
| 445.gobmk | 24 | **701** | **359** | 702 | 359 | 701 | 359 | 24 | 661 | 381 | **664** | **379** | 668 | 377 |
| 456.hmmer | 24 | **490** | **457** | 490 | 457 | 495 | 452 | 12 | 210 | 534 | **210** | **533** | 210 | 533 |
| 458.sjeng | 24 | 842 | 345 | **841** | **345** | 837 | 347 | 24 | **778** | **373** | 778 | 373 | 780 | 372 |
| 462.libquantum | 24 | 268 | 1860 | 272 | 1830 | **269** | **1850** | 24 | 268 | 1860 | 272 | 1830 | **269** | **1850** |
| 464.h264ref | 24 | 1067 | 498 | 1054 | 504 | **1060** | **501** | 24 | 1057 | 502 | **1062** | **500** | 1093 | 486 |
| 471.omnetpp | 24 | 650 | 231 | 649 | 231 | **650** | **231** | 24 | **632** | **238** | 632 | 238 | 631 | 238 |
| 473.astar | 24 | 758 | 222 | **756** | **223** | 753 | 224 | 24 | 758 | 222 | **756** | **223** | 753 | 224 |
| 483.xalancbmk | 24 | 467 | 355 | 465 | 356 | **467** | **355** | 24 | 467 | 355 | 465 | 356 | **467** | **355** |

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

```
   Hugepages was enabled with the following:
     'nodev   /mnt/hugepages   hugetlbfs  defaults 0 0' added to /etc/fstab
      echo 10800 > /proc/sys/vm/nr_hugepages
      export HUGETLB_MORECORE=yes
      export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## Platform Notes

```
   Turbo Mode enabled in BIOS
   Turbo Boost set to Traditional in BIOS
   Power C-states enabled in BIOS
   Demand Scrub disabled in BIOS
```

## General Notes

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

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## 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 -opt-prefetch
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/smartheap -lsmartheap
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

## Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

## Peak Compiler Invocation

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

```
400.perlbench: icc -m64
```

```
401.bzip2: icc -m64
```

```
456.hmmer: icc -m64
```

```
458.sjeng: icc -m64
```

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# Peak Compiler Invocation (Continued)

C++ benchmarks:
    icpc -m32

# Peak Portability Flags

       400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
          401.bzip2: -DSPEC_CPU_LP64
         456.hmmer: -DSPEC_CPU_LP64
          458.sjeng: -DSPEC_CPU_LP64
      462.libquantum: -DSPEC_CPU_LINUX
      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) -prof-use(pass 2)
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

          401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -opt-prefetch -auto-ilp32 -ansi-alias
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

            403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div
                -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

           429.mcf: -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 -auto-ilp32

         445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                -ansi-alias -auto-ilp32

         456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

          458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -unroll4 -auto-ilp32
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

      462.libquantum: basepeak = yes

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# Peak Optimization Flags (Continued)

464.h264ref: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2)
`-O3`(pass 2) `-no-prec-div`(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/smartheap -lsmartheap`

473.astar: `basepeak = yes`

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-ic12.0-linux64-revA.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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