



SPEC® CINT2006 Result

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Bull SAS

SPECint®_rate2006 = 155

NovaScale R430 F2 (Intel Xeon E5607, 2.26 GHz)

SPECint_rate_base2006 = 161

CPU2006 license: 20

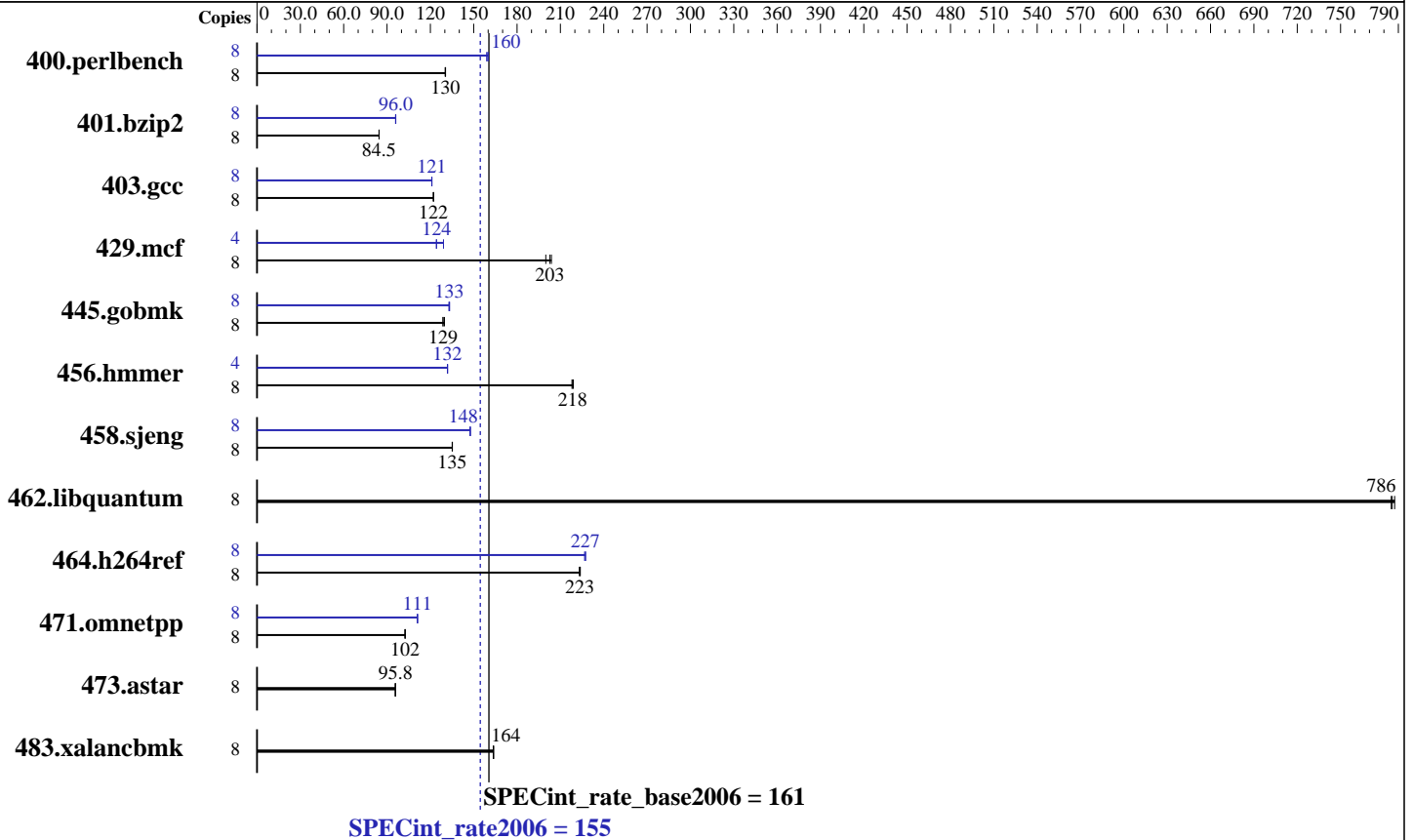
Test date: Mar-2011

Test sponsor: Bull SAS

Hardware Availability: Feb-2011

Tested by: Dell Inc.

Software Availability: Jan-2011



Hardware

CPU Name: Intel Xeon E5607
 CPU Characteristics:
 CPU MHz: 2267
 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: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), 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 | 8 | 599 | 131 | <u>599</u> | <u>130</u> | 600 | 130 | 8 | 492 | 159 | <u>489</u> | <u>160</u> | 489 | 160 |
| 401.bzip2 | 8 | <u>914</u> | <u>84.5</u> | 913 | 84.5 | 914 | 84.5 | 8 | <u>804</u> | <u>96.0</u> | 804 | 96.1 | 805 | 95.9 |
| 403.gcc | 8 | 528 | 122 | 527 | 122 | <u>527</u> | <u>122</u> | 8 | 532 | 121 | 532 | 121 | <u>532</u> | <u>121</u> |
| 429.mcf | 8 | 365 | 200 | <u>360</u> | <u>203</u> | 358 | 204 | 4 | 294 | 124 | <u>293</u> | <u>124</u> | 283 | 129 |
| 445.gobmk | 8 | <u>652</u> | <u>129</u> | 647 | 130 | 652 | 129 | 8 | 629 | 133 | <u>630</u> | <u>133</u> | 632 | 133 |
| 456.hammer | 8 | 341 | 219 | 342 | 218 | <u>342</u> | <u>218</u> | 4 | <u>283</u> | <u>132</u> | 283 | 132 | 283 | 132 |
| 458.sjeng | 8 | 716 | 135 | 717 | 135 | <u>716</u> | <u>135</u> | 8 | 657 | 147 | <u>656</u> | <u>148</u> | 656 | 148 |
| 462.libquantum | 8 | 211 | 785 | <u>211</u> | <u>786</u> | 211 | 787 | 8 | 211 | 785 | <u>211</u> | <u>786</u> | 211 | 787 |
| 464.h264ref | 8 | 791 | 224 | 794 | 223 | <u>792</u> | <u>223</u> | 8 | <u>779</u> | <u>227</u> | 781 | 227 | 778 | 227 |
| 471.omnetpp | 8 | 487 | 103 | 488 | 102 | <u>488</u> | <u>102</u> | 8 | 450 | 111 | <u>450</u> | <u>111</u> | 450 | 111 |
| 473.astar | 8 | 586 | 95.8 | <u>586</u> | <u>95.8</u> | 587 | 95.7 | 8 | 586 | 95.8 | <u>586</u> | <u>95.8</u> | 587 | 95.7 |
| 483.xalancbmk | 8 | 337 | 164 | 338 | 163 | <u>337</u> | <u>164</u> | 8 | 337 | 164 | 338 | 163 | <u>337</u> | <u>164</u> |

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
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 3600 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
```

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)

General Notes

Binaries were compiled on RHEL5.5
The Dell PowerEdge R410 and
the Bull NovaScale R430 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge R410 model.



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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 files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.xml>

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

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