



SPEC® CINT2006 Result

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Bull SAS

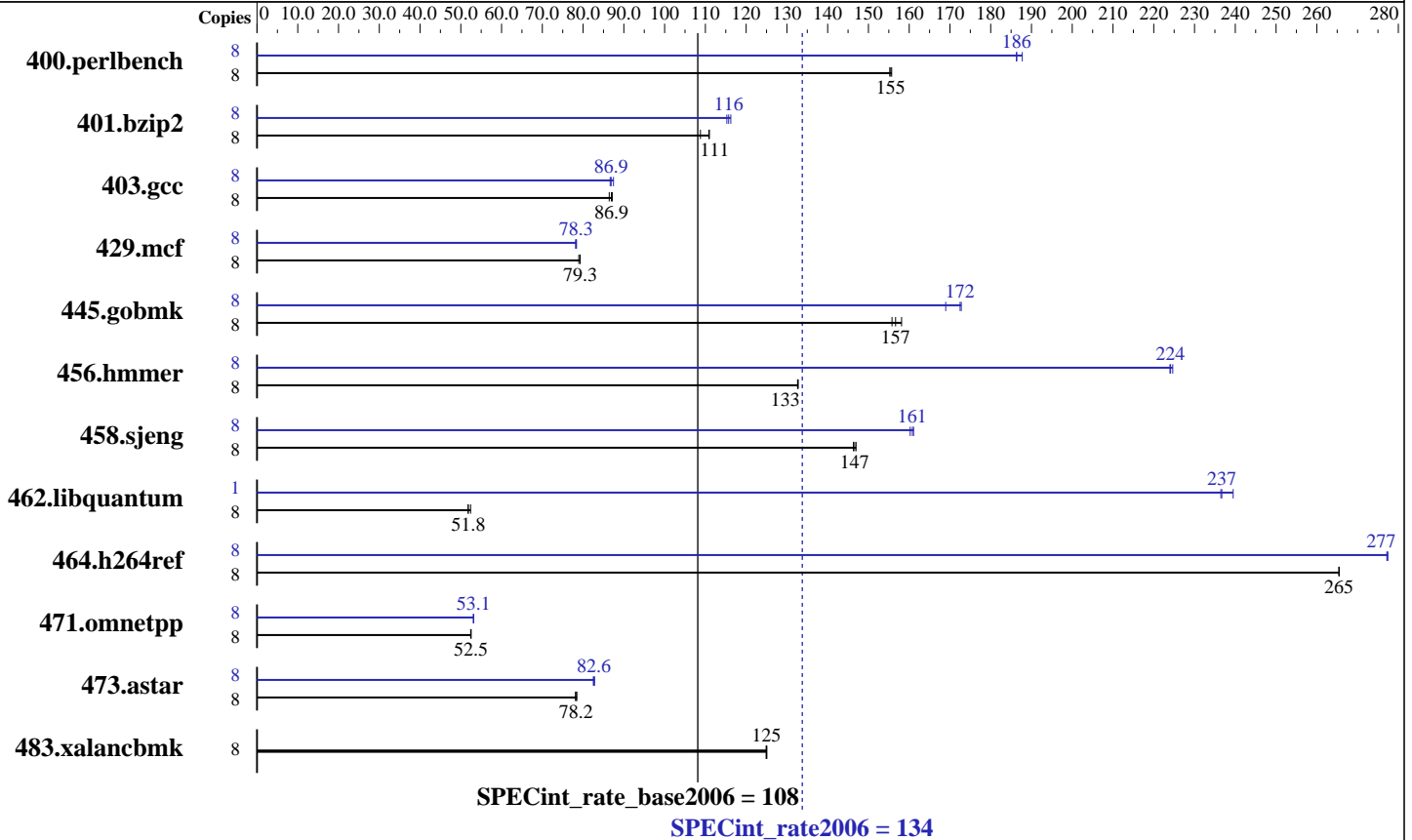
NovaScale T860 E1
(Intel Xeon X5460,3.16GHz)

SPECint®_rate2006 = 134

SPECint_rate_base2006 = 108

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 X5460
 CPU Characteristics: 3.16 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 3167
 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 | 502 | 156 | 504 | 155 | 503 | 155 | 8 | 420 | 186 | 419 | 186 | 416 | 188 |
| 401.bzip2 | 8 | 710 | 109 | 696 | 111 | 696 | 111 | 8 | 670 | 115 | 667 | 116 | 664 | 116 |
| 403.gcc | 8 | 739 | 87.2 | 745 | 86.4 | 741 | 86.9 | 8 | 736 | 87.5 | 741 | 86.9 | 743 | 86.6 |
| 429.mcf | 8 | 920 | 79.3 | 924 | 78.9 | 920 | 79.3 | 8 | 931 | 78.4 | 934 | 78.1 | 932 | 78.3 |
| 445.gobmk | 8 | 531 | 158 | 536 | 157 | 539 | 156 | 8 | 486 | 173 | 497 | 169 | 487 | 172 |
| 456.hmmer | 8 | 563 | 133 | 562 | 133 | 563 | 133 | 8 | 333 | 224 | 333 | 224 | 332 | 225 |
| 458.sjeng | 8 | 662 | 146 | 659 | 147 | 660 | 147 | 8 | 604 | 160 | 601 | 161 | 602 | 161 |
| 462.libquantum | 8 | 3163 | 52.4 | 3199 | 51.8 | 3200 | 51.8 | 1 | 87.6 | 236 | 86.5 | 239 | 87.5 | 237 |
| 464.h264ref | 8 | 667 | 265 | 667 | 265 | 667 | 266 | 8 | 639 | 277 | 638 | 277 | 638 | 277 |
| 471.omnetpp | 8 | 952 | 52.5 | 954 | 52.4 | 953 | 52.5 | 8 | 941 | 53.1 | 941 | 53.1 | 942 | 53.1 |
| 473.astar | 8 | 718 | 78.2 | 719 | 78.1 | 716 | 78.5 | 8 | 678 | 82.8 | 680 | 82.6 | 681 | 82.5 |
| 483.xalancbmk | 8 | 441 | 125 | 442 | 125 | 442 | 125 | 8 | 441 | 125 | 442 | 125 | 442 | 125 |

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 X5460) and
the Bull NovaScale T860 E1(Intel Xeon X5460,3.16GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/120Lj(Intel Xeon X5460) model.

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc



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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.hmmmer: /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.hmmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

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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 -lsmarheap

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 -lsmarheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

Continued on next page



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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-INT-ia32-linux-flags.20090713.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.20090713.xml>

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

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