SPEC® CINT2006 Result

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Bull SAS

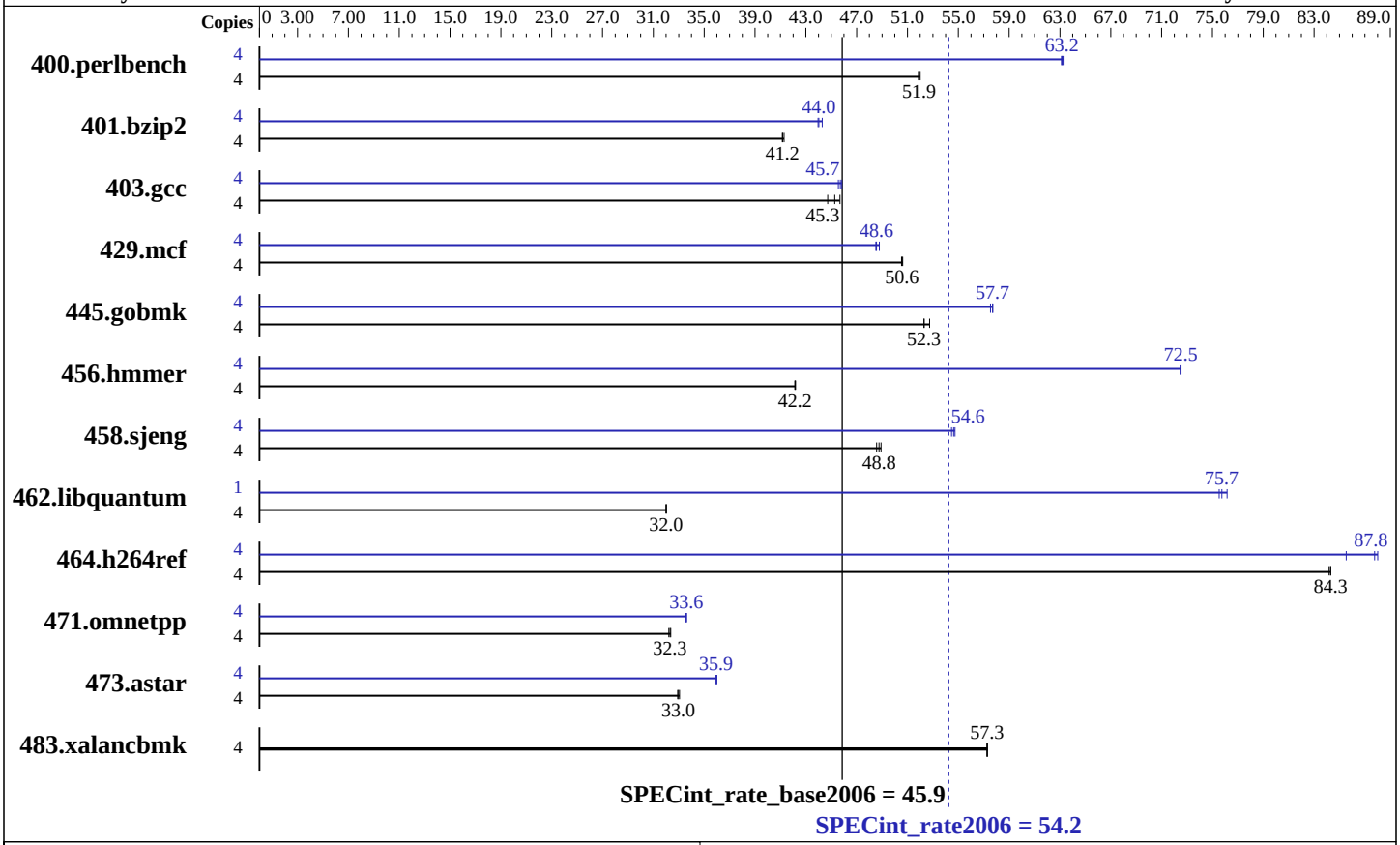
NovaScale R440 E1
(Intel Xeon E5405, 2.00GHz)

SPECint®_rate2006 = 54.2

SPECint_rate_base2006 = 45.9

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

Test date: Feb-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5405
CPU Characteristics:	2.00 GHz, 12 MB L2, 1333 MHz system bus
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 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:	16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	1x73 GB SAS, 15000 RPM
Other Hardware:	None

Software

Operating System:	SUSE LINUX Enterprise Server 10 SP1, Kernel 2.6.16.46-0.12-smp for x86_64
Compiler:	Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Binutils 2.17.50.0.15 SmartHeap library 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	4	752	52.0	754	51.9	**753**	**51.9**	4	618	63.2	**619**	**63.2**	619	63.1
401.bzip2	4	938	41.2	**938**	**41.2**	935	41.3	4	878	44.0	**877**	**44.0**	872	44.3
403.gcc	4	**711**	**45.3**	705	45.7	720	44.7	4	**704**	**45.7**	707	45.6	703	45.8
429.mcf	4	**721**	**50.6**	722	50.5	721	50.6	4	**751**	**48.6**	752	48.5	748	48.8
445.gobmk	4	802	52.3	**802**	**52.3**	796	52.7	4	727	57.7	**727**	**57.7**	729	57.5
456.hmmer	4	**885**	**42.2**	886	42.1	885	42.2	4	515	72.5	515	72.5	**515**	**72.5**
458.sjeng	4	996	48.6	**993**	**48.8**	989	48.9	4	889	54.5	884	54.7	**886**	**54.6**
462.libquantum	4	2588	32.0	**2590**	**32.0**	2590	32.0	1	272	76.2	**274**	**75.7**	274	75.5
464.h264ref	4	1050	84.3	**1050**	**84.3**	1052	84.2	4	1035	85.5	1006	88.0	**1009**	**87.8**
471.omnetpp	4	776	32.2	772	32.4	**774**	**32.3**	4	744	33.6	744	33.6	**744**	**33.6**
473.astar	4	**852**	**33.0**	853	32.9	849	33.1	4	780	36.0	**781**	**35.9**	781	35.9
483.xalancbmk	4	**482**	**57.3**	482	57.3	482	57.3	4	**482**	**57.3**	482	57.3	482	57.3

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
'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores (default)
```

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
 The Bull NovaScale R440 E1 (Intel Xeon E5405, 2.00GHz) and
 the Bull NovaScale R460 E1 (Intel Xeon E5405, 2.00GHz) models are electronically equivalent.
 The results have been measured on a NovaScale R460 E1 (Intel Xeon E5405, 2.00GHz) 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/spec/cpu2006/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/spec/cpu2006/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/spec/cpu2006/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.20090713.03.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.20090713.03.xml`

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