SPEC® CINT2006 Result

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Bull SAS

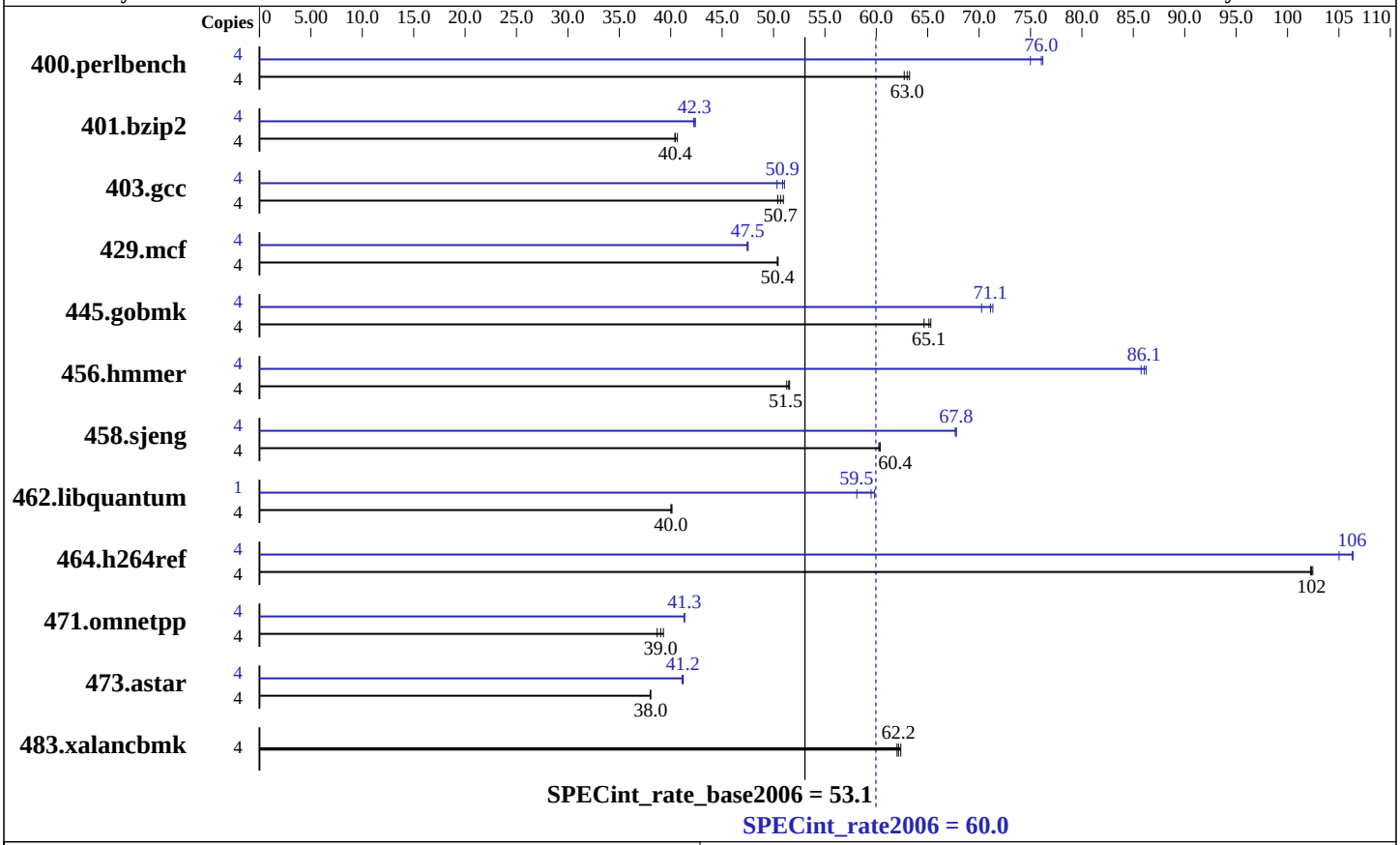
NovaScale R410 E1
(Intel Xeon X3320, 2.50 GHz)

SPECint®_rate2006 = 60.0

SPECint_rate_base2006 = 53.1

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

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



Hardware

CPU Name:	Intel Xeon X3320
CPU Characteristics:	1333 MHz system bus
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip, 3 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (4x2 GB) FB-DIMM PC2-6400E ECC CL6
Disk Subsystem:	1x80 GB SATA, 7200 RPM
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 10.1 for Linux 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:	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	623	62.7	618	63.2	**620**	**63.0**	4	521	75.0	513	76.2	**514**	**76.0**
401.bzip2	4	955	40.4	**955**	**40.4**	949	40.7	4	910	42.4	914	42.2	**912**	**42.3**
403.gcc	4	639	50.4	**635**	**50.7**	632	51.0	4	630	51.1	640	50.3	**633**	**50.9**
429.mcf	4	723	50.5	724	50.4	**724**	**50.4**	4	767	47.5	**768**	**47.5**	769	47.4
445.gobmk	4	649	64.6	643	65.3	**644**	**65.1**	4	**590**	**71.1**	597	70.2	588	71.3
456.hmmer	4	724	51.6	728	51.3	**725**	**51.5**	4	433	86.3	**434**	**86.1**	435	85.8
458.sjeng	4	802	60.4	**802**	**60.4**	803	60.2	4	715	67.7	**714**	**67.8**	714	67.8
462.libquantum	4	**2070**	**40.0**	2065	40.1	2070	40.0	1	357	58.1	346	59.8	**348**	**59.5**
464.h264ref	4	**865**	**102**	864	102	866	102	4	843	105	**833**	**106**	832	106
471.omnetpp	4	**641**	**39.0**	636	39.3	646	38.7	4	**605**	**41.3**	605	41.3	605	41.3
473.astar	4	738	38.1	**738**	**38.0**	739	38.0	4	683	41.1	**682**	**41.2**	681	41.2
483.xalancbmk	4	442	62.4	**444**	**62.2**	445	62.0	4	442	62.4	**444**	**62.2**	445	62.0

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
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
```

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 T810 E1(Intel Xeon X3320, 2.50 GHz),
the Bull NovaScale T830 E1(Intel Xeon X3320, 2.50 GHz) and
the Bull NovaScale R410 E1(Intel Xeon X3320, 2.50 GHz) models are electronically equivalent.
The results have been measured on a Bull NovaScale R410 E1(Intel Xeon X3320, 2.50 GHz) 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

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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/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/EM64T_Intel101_int_flags.20090714.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.xml`

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