SPEC® CINT2006 Result

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Bull SAS

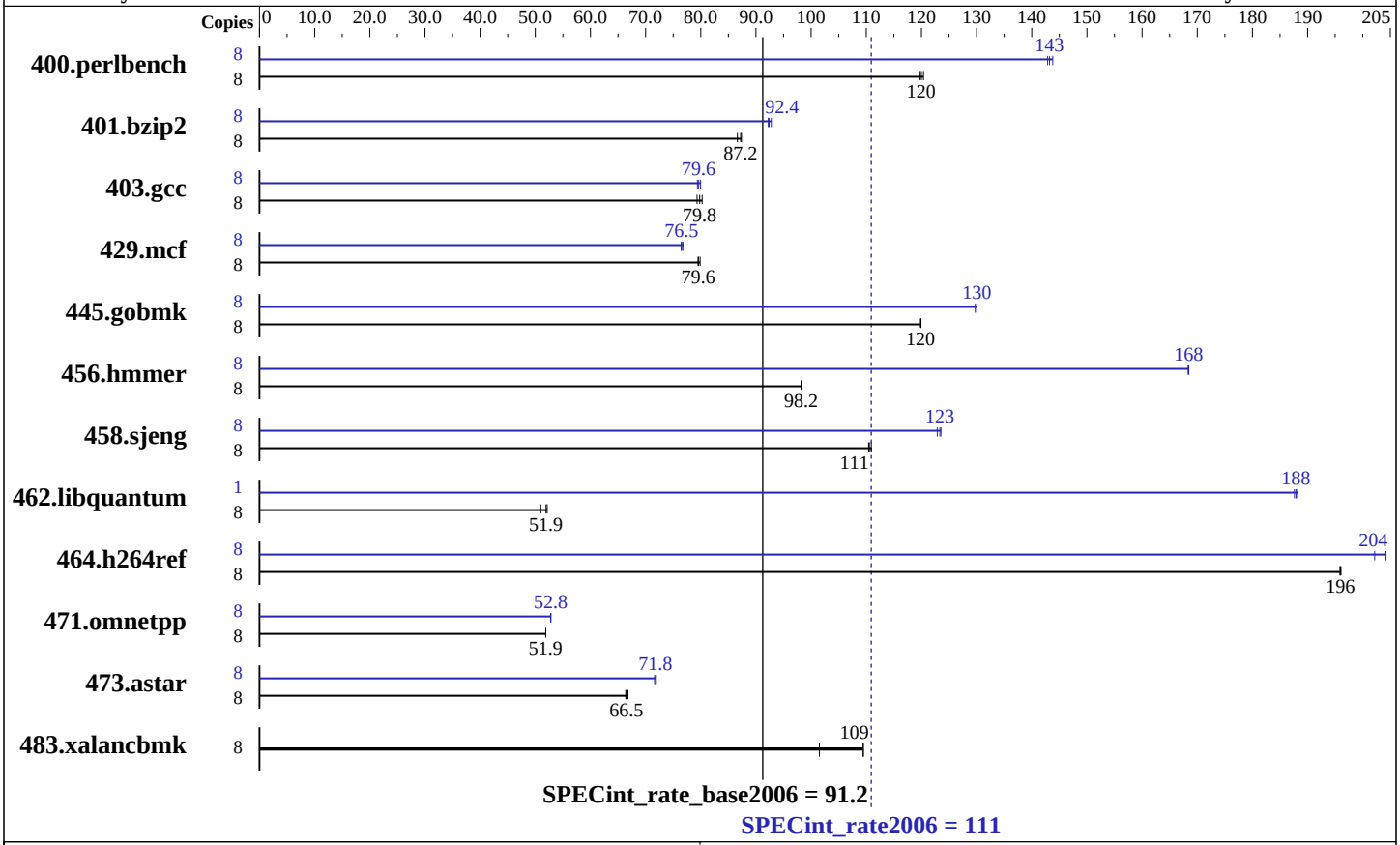
NovaScale R460 E1
(Intel Xeon E5410, 2.33 GHz)

SPECint®_rate2006 = 111

SPECint_rate_base2006 = 91.2

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

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



Hardware

CPU Name:	Intel Xeon E5410
CPU Characteristics:	1333 MHz system bus
CPU MHz:	2333
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:	24 GB (12x2 GB) FB-DIMM PC2-5300F ECC CL5
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:	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	8	**651**	**120**	649	120	653	120	8	**546**	**143**	544	144	547	143
401.bzip2	8	891	86.6	884	87.4	**885**	**87.2**	8	832	92.8	**836**	**92.4**	837	92.2
403.gcc	8	**807**	**79.8**	803	80.2	812	79.3	8	805	80.0	**809**	**79.6**	811	79.4
429.mcf	8	917	79.5	913	79.9	**917**	**79.6**	8	**953**	**76.5**	954	76.5	950	76.8
445.gobmk	8	700	120	700	120	**700**	**120**	8	647	130	645	130	**645**	**130**
456.hmmer	8	759	98.3	760	98.2	**760**	**98.2**	8	443	168	443	168	**443**	**168**
458.sjeng	8	873	111	877	110	**876**	**111**	8	**785**	**123**	784	124	788	123
462.libquantum	8	3179	52.1	**3191**	**51.9**	3251	51.0	1	110	188	110	188	**110**	**188**
464.h264ref	8	**903**	**196**	903	196	904	196	8	867	204	**868**	**204**	876	202
471.omnetpp	8	963	51.9	963	51.9	**963**	**51.9**	8	**947**	**52.8**	947	52.8	946	52.8
473.astar	8	841	66.8	**844**	**66.5**	846	66.4	8	784	71.6	781	71.9	**782**	**71.8**
483.xalancbmk	8	544	102	504	109	**504**	**109**	8	544	102	504	109	**504**	**109**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
'/usr/bin/taskset' used to bind processes to CPUs
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

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 E5410, 2.33 GHz) and
the Bull NovaScale R460 E1 (Intel Xeon E5410, 2.33 GHz) models are electronically equivalent.
The results have been measured on a Bull NovaScale R460 E1 (Intel Xeon E5410, 2.33 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:

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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/EM64T_Intel101_int_flags.20090713.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090713.00.xml`

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