SPEC® CINT2006 Result

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Bull SAS

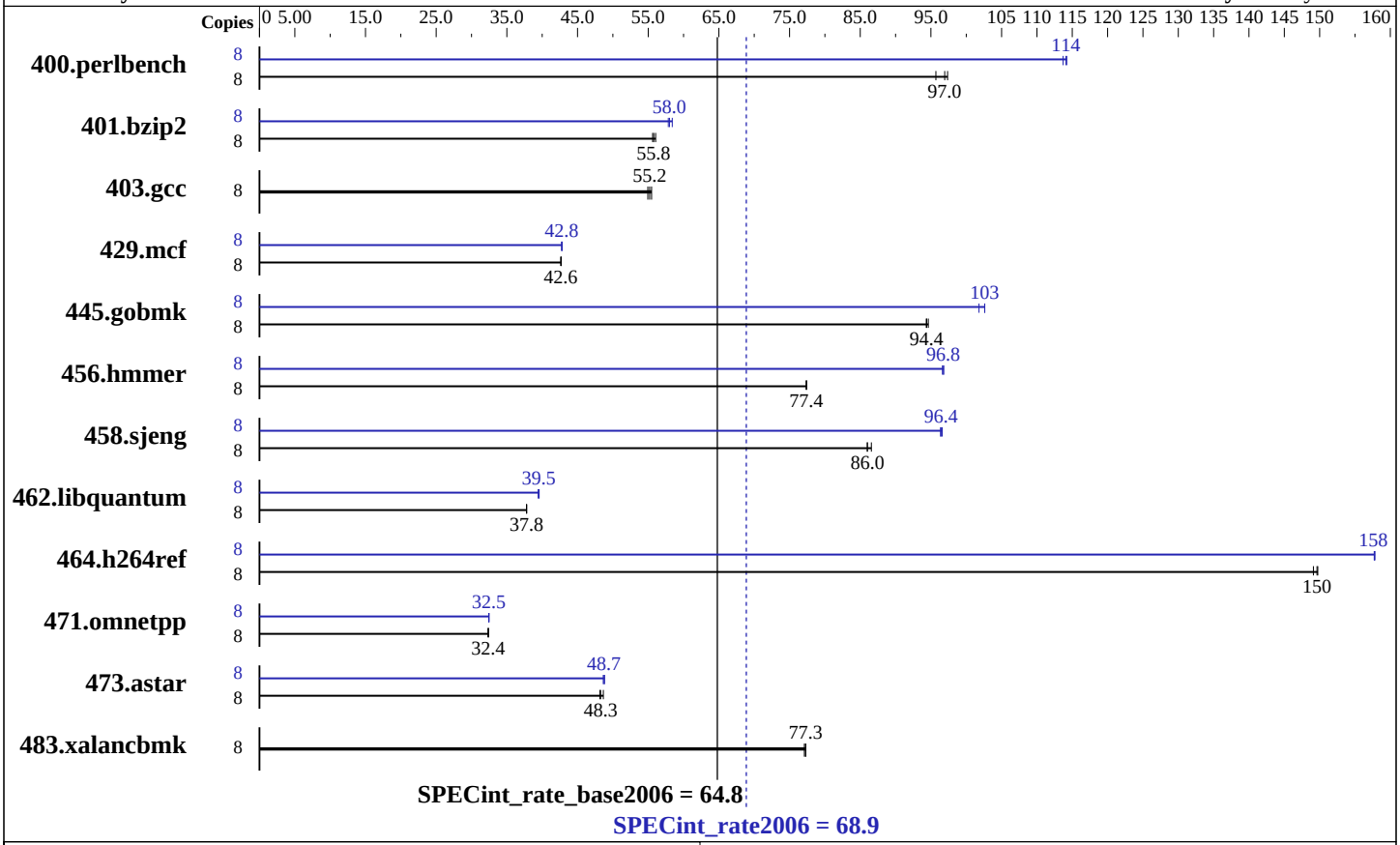
NovaScale R440
(Intel Xeon processor E5320,1.86GHz)

SPECint®_rate2006 = 68.9

SPECint_rate_base2006 = 64.8

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

Test date: Jul-2007
Hardware Availability: Mar-2007
Software Availability: May-2007



Hardware

CPU Name:	Intel Xeon E5320
CPU Characteristics:	1.86 GHz, 8 MB L2, 1066 MHz system bus
CPU MHz:	1866
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1 to 2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	8 MB I+D on chip per chip, 4 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	12 GB (12x1 GB) FB-DIMM PC2-4200F ECC CL4
Disk Subsystem:	1x73 GB SAS, 15000 RPM
Other Hardware:	None

Software

Operating System:	SUSE LINUX Enterprise Server 10 Kernel 2.6.16.21-0.8-smp for x86_64
Compiler:	Intel C++ Compiler for Linux32 and Linux64 version 10.0 Build 20070426 Package ID: l_cc_p_10.0.023
Auto Parallel:	No
File System:	ext2
System State:	Multi-user run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap library V8.1 Binutils 2.17.50.0.15

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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	**806**	**97.0**	803	97.4	817	95.7	8	687	114	684	114	**685**	**114**
401.bzip2	8	**1384**	**55.8**	1388	55.6	1377	56.1	8	1335	57.8	**1331**	**58.0**	1322	58.4
403.gcc	8	1172	54.9	1161	55.5	**1167**	**55.2**	8	1172	54.9	1161	55.5	**1167**	**55.2**
429.mcf	8	**1711**	**42.6**	1711	42.6	1709	42.7	8	1707	42.7	1704	42.8	**1706**	**42.8**
445.gobmk	8	**889**	**94.4**	887	94.6	890	94.3	8	824	102	818	103	**818**	**103**
456.hmmer	8	965	77.4	**965**	**77.4**	964	77.4	8	772	96.6	**771**	**96.8**	771	96.8
458.sjeng	8	1126	86.0	**1125**	**86.0**	1118	86.6	8	1005	96.4	1002	96.6	**1004**	**96.4**
462.libquantum	8	4387	37.8	**4386**	**37.8**	4386	37.8	8	4204	39.4	**4196**	**39.5**	4189	39.6
464.h264ref	8	1182	150	1187	149	**1183**	**150**	8	1123	158	**1122**	**158**	1122	158
471.omnetpp	8	1542	32.4	1546	32.3	**1545**	**32.4**	8	1540	32.5	**1540**	**32.5**	1541	32.4
473.astar	8	**1163**	**48.3**	1154	48.7	1166	48.2	8	1155	48.6	1150	48.8	**1152**	**48.7**
483.xalancbmk	8	714	77.3	**714**	**77.3**	716	77.1	8	714	77.3	**714**	**77.3**	716	77.1

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
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
```

General Notes

```
The NovaScale R440 and the NovaScale R460 models are
electronically equivalent.
The results have been measured on a NovaScale R460 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 -Wl,-z,muldefs

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -ansi-alias -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/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/include

456.hmmer: /opt/intel/cce/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/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 -Wl,-z,muldefs

401.bzip2: -prof_gen(pass 1) -prof_use(pass 2) -fast -Wl,-z,muldefs

403.gcc: basepeak = yes

429.mcf: -fast -prefetch -Wl,-z,muldefs

445.gobmk: -prof_gen(pass 1) -prof_use(pass 2) -xT -O2 -ipo -no-prec_div -ansi-alias -Wl,-z,muldefs

456.hmmer: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll2 -ansi-alias -Wl,-z,muldefs

458.sjeng: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4 -Wl,-z,muldefs

462.libquantum: -prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -Wl,-z,muldefs

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof_gen(pass 1) -prof_use(pass 2) -xT -O3 -ipo -no-prec_div -ansi-alias -Wl,-z,muldefs -L/spec/cpu2006/lib -lsmartheap

473.astar: Same as 471.omnetpp

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

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_Intel100_flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.20090714.xml

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