



SPEC[®] CINT2006 Result

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Bull SAS

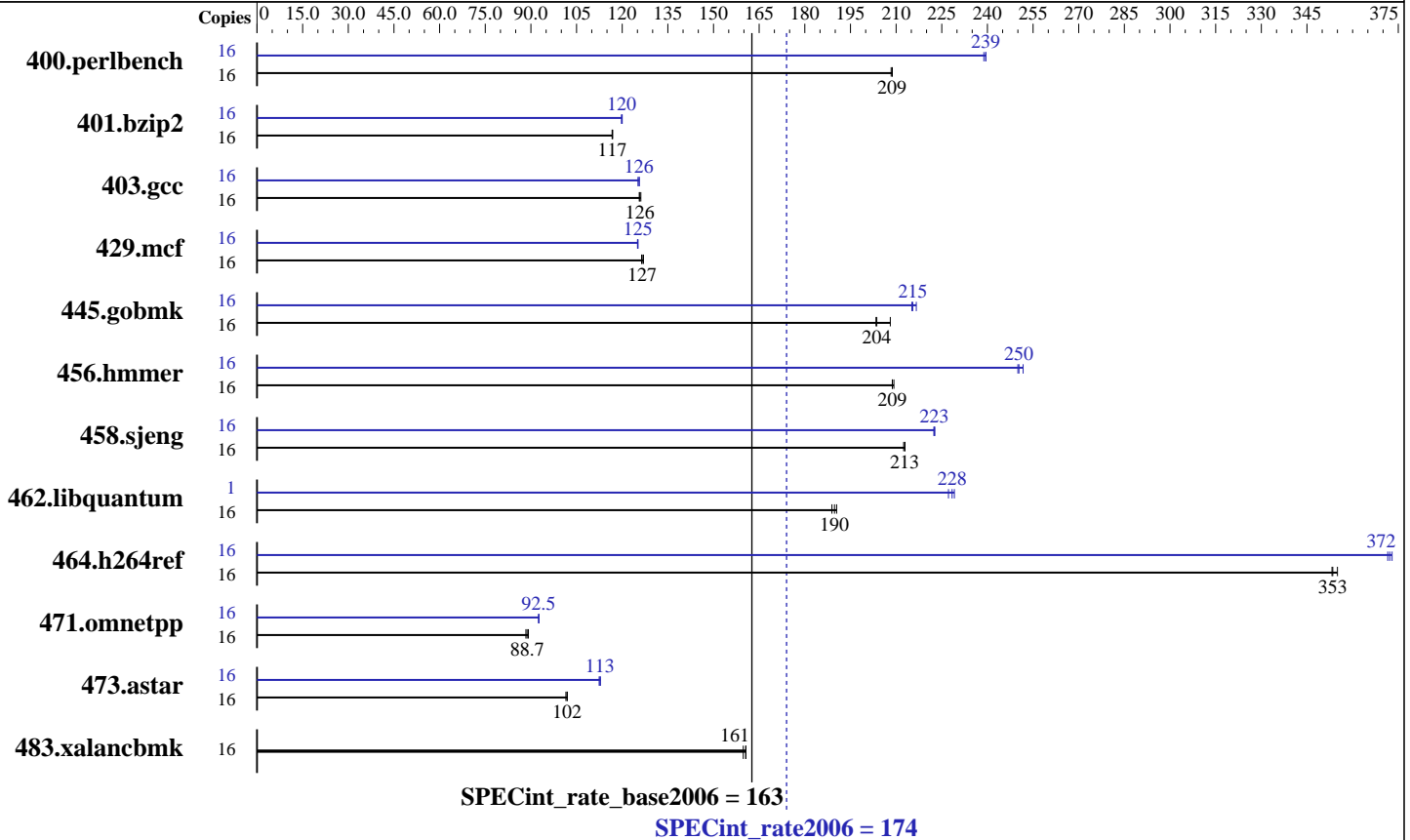
NovaScale R480 E1
(Intel Xeon E7420, 2.13 GHz)

SPECint[®]_rate2006 = 174

SPECint_rate_base2006 = 163

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

Test date: Nov-2008
Hardware Availability: Nov-2008
Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E7420
 CPU Characteristics: 1066 MHz system bus
 CPU MHz: 2133
 FPU: Integrated
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip
 CPU(s) orderable: 1,2,3,4 chips
 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: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (16x2 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) SP2, Kernel 2.6.16.60-0.21-smp
 Compiler: Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.044
 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 2.18.50.0.7.20080502



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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	16	750	208	<u>749</u>	<u>209</u>	749	209	16	<u>653</u>	<u>239</u>	653	239	655	239
401.bzip2	16	<u>1322</u>	<u>117</u>	1321	117	1323	117	16	1287	120	1289	120	<u>1288</u>	<u>120</u>
403.gcc	16	1021	126	<u>1024</u>	<u>126</u>	1026	126	16	1025	126	<u>1026</u>	<u>126</u>	1029	125
429.mcf	16	1149	127	<u>1153</u>	<u>127</u>	1155	126	16	1166	125	1167	125	<u>1166</u>	<u>125</u>
445.gobmk	16	807	208	<u>824</u>	<u>204</u>	825	203	16	775	217	<u>779</u>	<u>215</u>	780	215
456.hammer	16	715	209	713	209	<u>715</u>	<u>209</u>	16	<u>596</u>	<u>250</u>	593	252	597	250
458.sjeng	16	911	212	<u>910</u>	<u>213</u>	909	213	16	<u>870</u>	<u>223</u>	869	223	871	222
462.libquantum	16	1741	190	<u>1747</u>	<u>190</u>	1755	189	1	90.4	229	91.2	227	<u>90.7</u>	<u>228</u>
464.h264ref	16	997	355	1002	353	<u>1002</u>	<u>353</u>	16	949	373	<u>951</u>	<u>372</u>	953	372
471.omnetpp	16	1121	89.2	<u>1127</u>	<u>88.7</u>	1132	88.4	16	1079	92.7	<u>1081</u>	<u>92.5</u>	1081	92.5
473.astar	16	1102	102	<u>1103</u>	<u>102</u>	1107	101	16	<u>997</u>	<u>113</u>	999	112	995	113
483.xalancbmk	16	687	161	691	160	<u>688</u>	<u>161</u>	16	687	161	691	160	<u>688</u>	<u>161</u>

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

Submit Notes

The config file option 'submit' was used.
taskset was used to bind processes to cores except
for 462.libquantum peak

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

Platform Notes

Bios settings:
Hardware Prefetcher: Disabled
Adjacent Cache Line Prefetch: Disabled
FSB High Bandwidth Optimization: Disabled

General Notes

The NEC Express5800/R140a-4(Intel Xeon E7420) and
the Bull NovaScale R480 E1(Intel Xeon E7420, 2.13 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/R140a-4(Intel Xeon E7420) model.



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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:
-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -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/Compiler/11.0/044/bin/intel64/icc
-L/opt/intel/Compiler/11.0/044/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/044/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/044/bin/intel64/icc
-L/opt/intel/Compiler/11.0/044/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/044/ipp/em64t/include

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Peak Compiler Invocation (Continued)

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
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -ansi-alias -opt-prefetch
401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -ansi-alias
403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc
-opt-malloc-options=3
429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch
445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo
-no-prec-div -ansi-alias
456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
-ansi-alias
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4
462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static
-opt-malloc-options=3 -parallel -par-runtime-control
-opt-prefetch
464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

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Peak Optimization Flags (Continued)

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=block
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.20090713.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revD.20090713.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml>

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

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 22:53:04 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 January 2009.