



SPEC® CINT2006 Result

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Bull SAS

NovaScale R440 E1
(Intel Xeon X5470, 3.33 GHz)

SPECint®_rate2006 = 144

SPECint_rate_base2006 = 130

CPU2006 license: 20

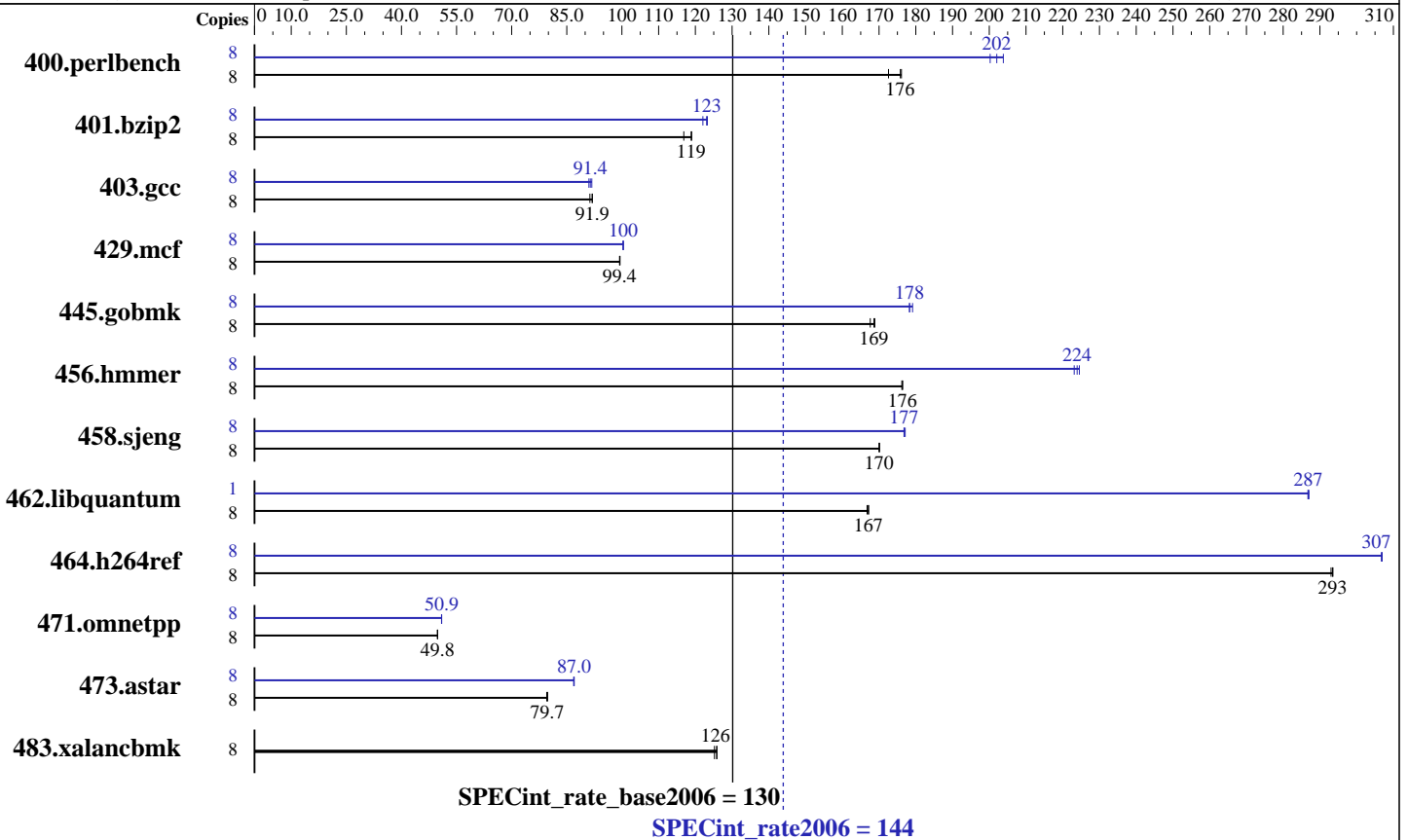
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Nov-2008

Hardware Availability: Oct-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon X5470
 CPU Characteristics: 3.33 GHz, 2x6 MB L2 shared, 1333 MHz system bus
 CPU MHz: 3333
 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: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
 Disk Subsystem: 1x146.5 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	8	453	173	<u>445</u>	<u>176</u>	444	176	8	383	204	<u>387</u>	<u>202</u>	390	200
401.bzip2	8	<u>650</u>	<u>119</u>	649	119	661	117	8	<u>627</u>	<u>123</u>	626	123	633	122
403.gcc	8	705	91.3	<u>701</u>	<u>91.9</u>	701	91.9	8	<u>705</u>	<u>91.4</u>	708	91.0	701	91.8
429.mcf	8	<u>734</u>	<u>99.4</u>	733	99.5	734	99.4	8	<u>727</u>	<u>100</u>	727	100	727	100
445.gobmk	8	497	169	501	168	<u>498</u>	<u>169</u>	8	471	178	<u>471</u>	<u>178</u>	469	179
456.hammer	8	424	176	<u>423</u>	<u>176</u>	423	176	8	332	225	335	223	<u>333</u>	<u>224</u>
458.sjeng	8	569	170	<u>569</u>	<u>170</u>	569	170	8	547	177	547	177	<u>547</u>	<u>177</u>
462.libquantum	8	992	167	994	167	<u>992</u>	<u>167</u>	1	72.2	287	<u>72.2</u>	<u>287</u>	72.3	287
464.h264ref	8	604	293	603	294	<u>603</u>	<u>293</u>	8	577	307	577	307	<u>577</u>	<u>307</u>
471.omnetpp	8	1003	49.8	<u>1004</u>	<u>49.8</u>	1004	49.8	8	982	50.9	<u>982</u>	<u>50.9</u>	982	50.9
473.astar	8	706	79.5	<u>705</u>	<u>79.7</u>	704	79.8	8	<u>646</u>	<u>87.0</u>	646	86.9	645	87.0
483.xalancbmk	8	<u>439</u>	<u>126</u>	439	126	441	125	8	<u>439</u>	<u>126</u>	439	126	441	125

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: Enabled
Adjacent Cache Line Prefetch: Disabled

General Notes

The NEC Express5800/120Rh-1(Intel Xeon X5470),
the NEC Express5800/120Rj-2(Intel Xeon X5470),
the Bull NovaScale R440 E1(Intel Xeon X5470, 3.33 GHz) and
the Bull NovaScale R460 E1(Intel Xeon X5470, 3.33 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon X5470) 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-calloc
-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.

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