



SPEC® CINT2006 Result

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Bull SAS

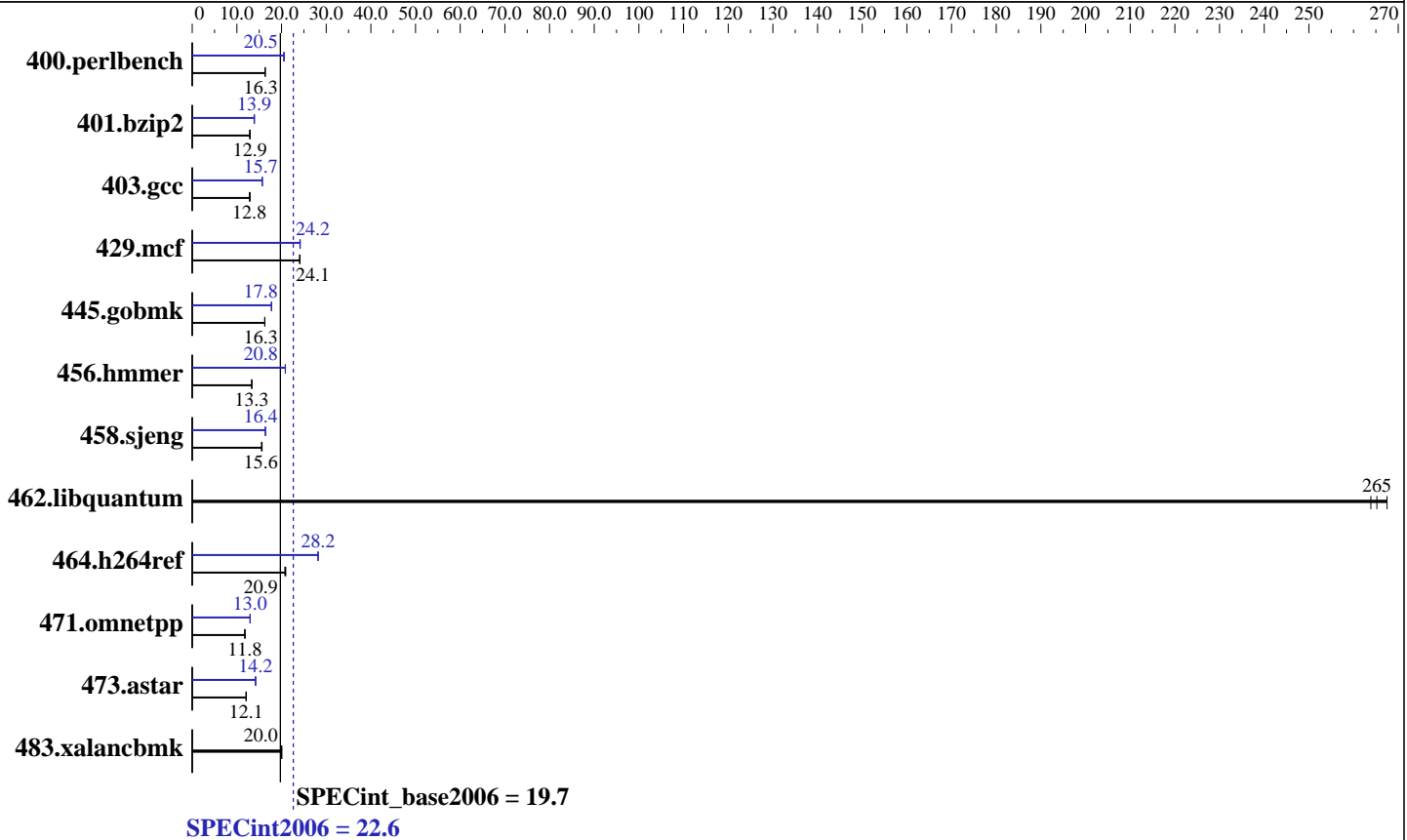
NovaScale R480 E1
(Intel Xeon E7440, 2.40 GHz)

SPECint®2006 = 22.6

SPECint_base2006 = 19.7

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

Test date: Jan-2009
Hardware Availability: Nov-2008
Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E7440
 CPU Characteristics: 1066 MHz system bus
 CPU MHz: 2400
 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: 16 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (16 x 2GB DDR2-667 FBDIMM)
 Disk Subsystem: 1x146 GB SAS, 10000 RPM
 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_11.0.042
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V8.1
Binutils 2.18.50.0.7.20080502



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	597	16.4	<u>599</u>	<u>16.3</u>	599	16.3	477	20.5	474	20.6	<u>476</u>	<u>20.5</u>
401.bzip2	751	12.8	<u>745</u>	<u>12.9</u>	744	13.0	<u>694</u>	<u>13.9</u>	692	13.9	697	13.9
403.gcc	<u>627</u>	<u>12.8</u>	627	12.8	621	13.0	<u>514</u>	<u>15.7</u>	512	15.7	514	15.7
429.mcf	379	24.0	378	24.1	<u>379</u>	<u>24.1</u>	<u>377</u>	<u>24.2</u>	378	24.1	377	24.2
445.gobmk	645	16.3	<u>645</u>	<u>16.3</u>	646	16.2	591	17.7	<u>591</u>	<u>17.8</u>	591	17.8
456.hammer	701	13.3	<u>700</u>	<u>13.3</u>	699	13.4	447	20.9	<u>447</u>	<u>20.8</u>	448	20.8
458.sjeng	<u>774</u>	<u>15.6</u>	774	15.6	781	15.5	<u>738</u>	<u>16.4</u>	738	16.4	740	16.4
462.libquantum	<u>78.1</u>	<u>265</u>	77.5	268	78.5	264	<u>78.1</u>	<u>265</u>	77.5	268	78.5	264
464.h264ref	<u>1060</u>	<u>20.9</u>	1057	20.9	1067	20.7	785	28.2	<u>785</u>	<u>28.2</u>	786	28.2
471.omnetpp	531	11.8	529	11.8	<u>530</u>	<u>11.8</u>	<u>482</u>	<u>13.0</u>	482	13.0	483	13.0
473.astar	581	12.1	582	12.1	<u>581</u>	<u>12.1</u>	<u>495</u>	<u>14.2</u>	496	14.1	493	14.2
483.xalancbmk	345	20.0	344	20.0	<u>345</u>	<u>20.0</u>	345	20.0	344	20.0	<u>345</u>	<u>20.0</u>

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

Platform Notes

BIOS Settings:
Adjacent Cache Line Prefetch = Enabled
Hardware Prefetcher = Enabled

General Notes

The NEC Express5800/R140a-4(Intel Xeon E7440) and the Bull NovaScale R480 E1(Intel Xeon E7440, 2.40 GHz) models are electronically equivalent. The results have been measured on a Bull NovaScale R480 E1(Intel Xeon E7440, 2.40 GHz) model.

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc



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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 -parallel
-par-runtime-control -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/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/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

C++ benchmarks:

icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

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.bzips2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -auto-ilp32 -opt-prefetch
-ansi-alias
403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc
-opt-malloc-options=3
429.mcf: -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 -auto-ilp32
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4
462.libquantum: basepeak = yes
464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

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/spec/cpu2006.1.1/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/spec/cpu2006.1.1/lib -lsmartheap
483.xalancbmk: basepeak = yes



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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-Linux64-Platform.20090713.01.html>
<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.01.html>

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

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.01.xml>
<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.01.xml>

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