



SPEC® CINT2006 Result

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Bull SAS

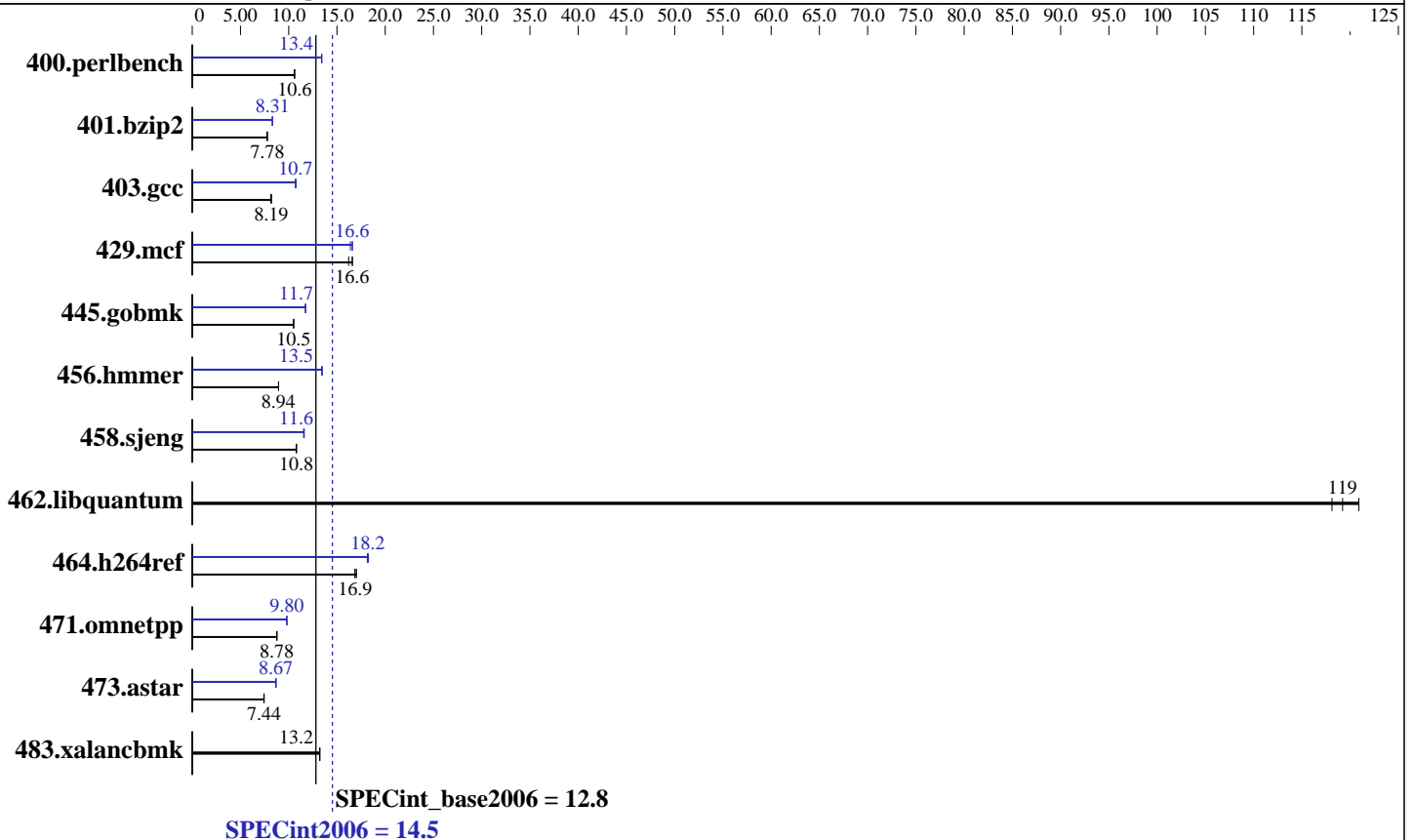
NovaScale R480 E1
(Intel Xeon E7310, 1.60 GHz)

SPECint®2006 = 14.5

SPECint_base2006 = 12.8

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

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



Hardware

CPU Name: Intel Xeon E7310
 CPU Characteristics: 1066 MHz system bus
 CPU MHz: 1600
 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: 4 MB I+D on chip per chip, 2 MB shared / 2 cores
 L3 Cache: None
 Other Cache: None
 Memory: 32 GB (16x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
 Disk Subsystem: 1x73.2 GB SAS, 15000 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 20081105 Package ID: l_cproc_p_11.0.074
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	920	10.6	923	10.6	<u>921</u>	<u>10.6</u>	729	13.4	728	13.4	<u>728</u>	<u>13.4</u>
401.bzip2	1240	7.78	1244	7.76	<u>1240</u>	<u>7.78</u>	1160	8.32	<u>1161</u>	<u>8.31</u>	1163	8.30
403.gcc	<u>983</u>	<u>8.19</u>	988	8.15	981	8.21	<u>751</u>	<u>10.7</u>	749	10.8	752	10.7
429.mcf	562	16.2	549	16.6	<u>550</u>	<u>16.6</u>	549	16.6	557	16.4	<u>550</u>	<u>16.6</u>
445.gobmk	<u>999</u>	<u>10.5</u>	999	10.5	998	10.5	<u>893</u>	<u>11.7</u>	893	11.7	894	11.7
456.hammer	<u>1043</u>	<u>8.94</u>	1043	8.95	1043	8.94	<u>693</u>	<u>13.5</u>	693	13.5	694	13.4
458.sjeng	1119	10.8	<u>1123</u>	<u>10.8</u>	1123	10.8	1047	11.6	1042	11.6	<u>1047</u>	<u>11.6</u>
462.libquantum	171	121	175	118	<u>174</u>	<u>119</u>	171	121	175	118	<u>174</u>	<u>119</u>
464.h264ref	1313	16.9	1300	17.0	<u>1311</u>	<u>16.9</u>	1212	18.3	1219	18.1	<u>1217</u>	<u>18.2</u>
471.omnetpp	<u>712</u>	<u>8.78</u>	714	8.75	712	8.78	<u>638</u>	<u>9.80</u>	638	9.80	638	9.80
473.astar	945	7.43	<u>944</u>	<u>7.44</u>	942	7.46	<u>809</u>	<u>8.67</u>	811	8.65	808	8.69
483.xalancbmk	<u>522</u>	<u>13.2</u>	522	13.2	522	13.2	<u>522</u>	<u>13.2</u>	522	13.2	522	13.2

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

General Notes

The NEC Express5800/R140a-4(Intel Xeon E7310) and the Bull NovaScale R480 E1(Intel Xeon E7310, 1.60 GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/R140a-4(Intel Xeon E7310) 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:
-xSSSE3 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch
C++ benchmarks:
-xSSSE3 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib -lsmarheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc
401.bzip2: /opt/intel/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/ipp/em64t/include
456.hmmer: /opt/intel/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/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) -xSSSE3 -ipo -O3
-no-prec-div -static -ansi-alias -opt-prefetch
401.bzp2: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -static -auto-ilp32 -opt-prefetch
-ansi-alias
403.gcc: -xSSSE3 -ipo -O3 -no-prec-div -static -inline-alloc
-opt-malloc-options=3
429.mcf: -xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch
445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -O2 -ipo
-no-prec-div -ansi-alias
456.hmmer: -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2
-ansi-alias -auto-ilp32
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -static -unroll4
462.libquantum: basepeak = yes
464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=block
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmarheap
473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmarheap
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-ic11.0-int-linux64-revE.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-revE.xml>
<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml>

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