



SPEC® CINT2006 Result

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Bull SAS

NovaScale R630 E1 MR
(Intel Xeon E5450, 3.00 GHz)

SPECint®2006 = 27.0

SPECint_base2006 = 23.8

CPU2006 license: 20

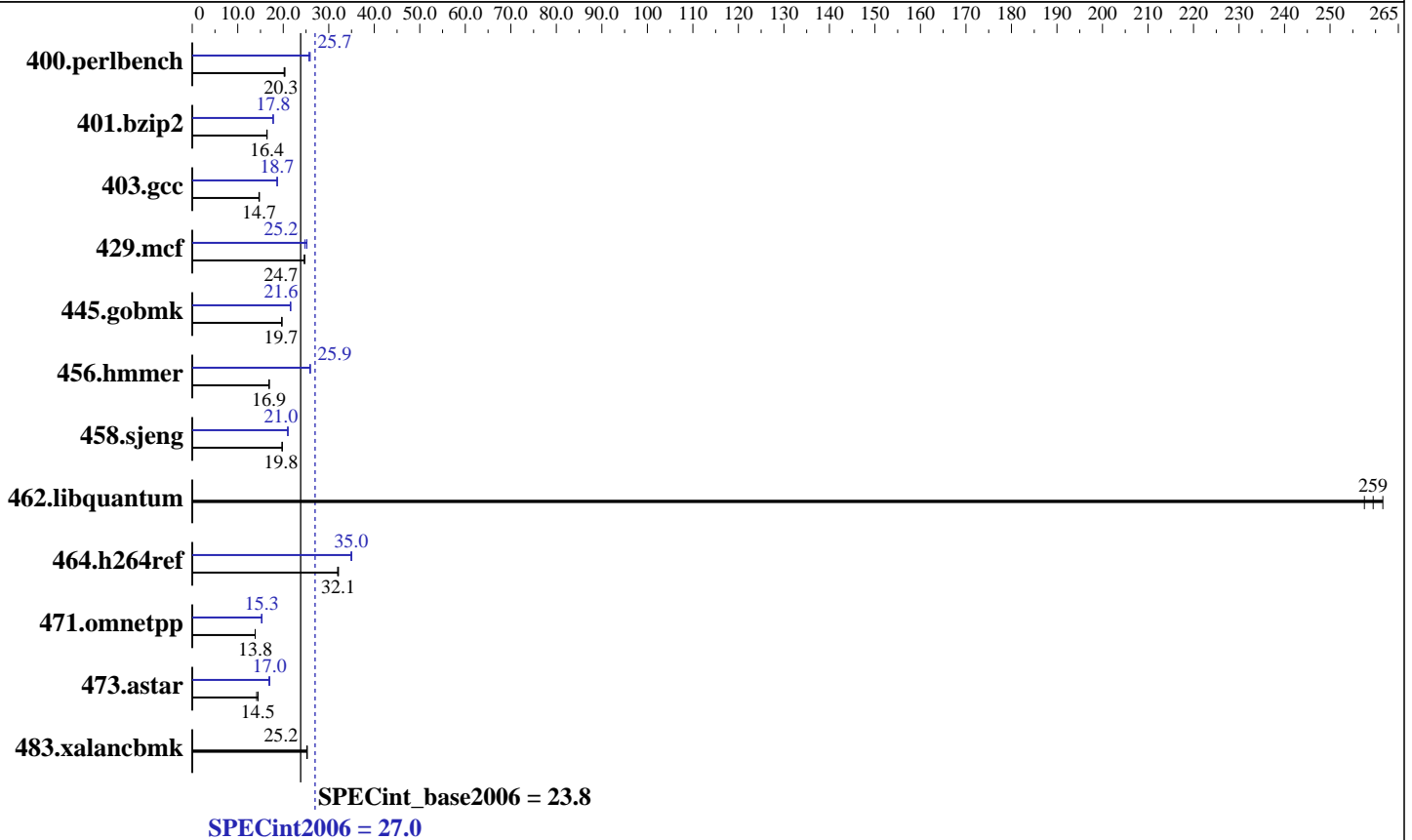
Test sponsor: Bull SAS

Tested by: NEC Corporation

Test date: Dec-2008

Hardware Availability: Oct-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E5450
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips (fault tolerant, see Platform Notes)
 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: 24 GB (6x4 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
 Disk Subsystem: 2x146.5 GB SAS, 15000 RPM, Software RAID Level1
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 5.2
 Advanced Platform, Kernel 2.6.18-92.1.13.el5 on
 an x86_64
 Compiler: Intel C++ Compiler 11.0 for Linux
 Build 20081105 Package ID: l_cproc_p_11.0.074
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap Library 8.1
 ft Server Control Software 6.0.2-198



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	484	20.2	480	20.3	<u>481</u>	<u>20.3</u>	380	25.7	377	25.9	<u>380</u>	<u>25.7</u>
401.bzip2	589	16.4	587	16.4	<u>587</u>	<u>16.4</u>	543	17.8	542	17.8	<u>543</u>	<u>17.8</u>
403.gcc	<u>547</u>	<u>14.7</u>	549	14.7	546	14.7	431	18.7	432	18.6	<u>431</u>	<u>18.7</u>
429.mcf	369	24.7	<u>369</u>	<u>24.7</u>	371	24.6	369	24.7	<u>363</u>	<u>25.2</u>	362	25.2
445.gobmk	532	19.7	<u>533</u>	<u>19.7</u>	533	19.7	<u>486</u>	<u>21.6</u>	485	21.6	486	21.6
456.hammer	<u>552</u>	<u>16.9</u>	552	16.9	552	16.9	<u>360</u>	<u>25.9</u>	360	25.9	360	25.9
458.sjeng	612	19.8	<u>612</u>	<u>19.8</u>	612	19.8	575	21.0	<u>576</u>	<u>21.0</u>	577	21.0
462.libquantum	<u>79.9</u>	<u>259</u>	79.2	262	80.5	258	<u>79.9</u>	<u>259</u>	79.2	262	80.5	258
464.h264ref	689	32.1	<u>690</u>	<u>32.1</u>	693	31.9	634	34.9	632	35.0	<u>633</u>	<u>35.0</u>
471.omnetpp	<u>452</u>	<u>13.8</u>	452	13.8	452	13.8	410	15.2	<u>409</u>	<u>15.3</u>	409	15.3
473.astar	496	14.2	<u>486</u>	<u>14.5</u>	485	14.5	<u>414</u>	<u>17.0</u>	416	16.9	413	17.0
483.xalancbmk	273	25.3	<u>274</u>	<u>25.2</u>	274	25.2	273	25.3	<u>274</u>	<u>25.2</u>	274	25.2

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

This Express5800/320Fd-MR is a fault-tolerant server.
Two modules are installed in this server.
Each module physically has "2CPU chips,24GB memory", The total physical configuration is "4CPU chips,48GB memory".
Using fault-tolerant lockstep technology, these two modules communicate with each other and execute the same instructions at the same time, The operating system only sees "2CPU chips,24GB memory" as the other components add only redundancy and do not contribute to any performance benefit.

General Notes

The NEC Express5800/320Fd-MR(Intel Xeon E5450) and the Bull NovaScale R630 E1 MR(Intel Xeon E5450, 3.00 GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/320Fd-MR(Intel Xeon E5450) model.

Base Compiler Invocation

C benchmarks:
icc

Continued on next page



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Base Compiler Invocation (Continued)

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 -parallel
-par-runtime-control -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/11.0/074/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



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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 -auto-ilp32 -opt-prefetch
-ansi-alias
403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-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/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



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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-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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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