SPEC® CINT2006 Result
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Bull SAS

NovaScale R410 F2 (Intel Xeon X3430, 2.40 GHz)

SPECint®2006 = 25.7

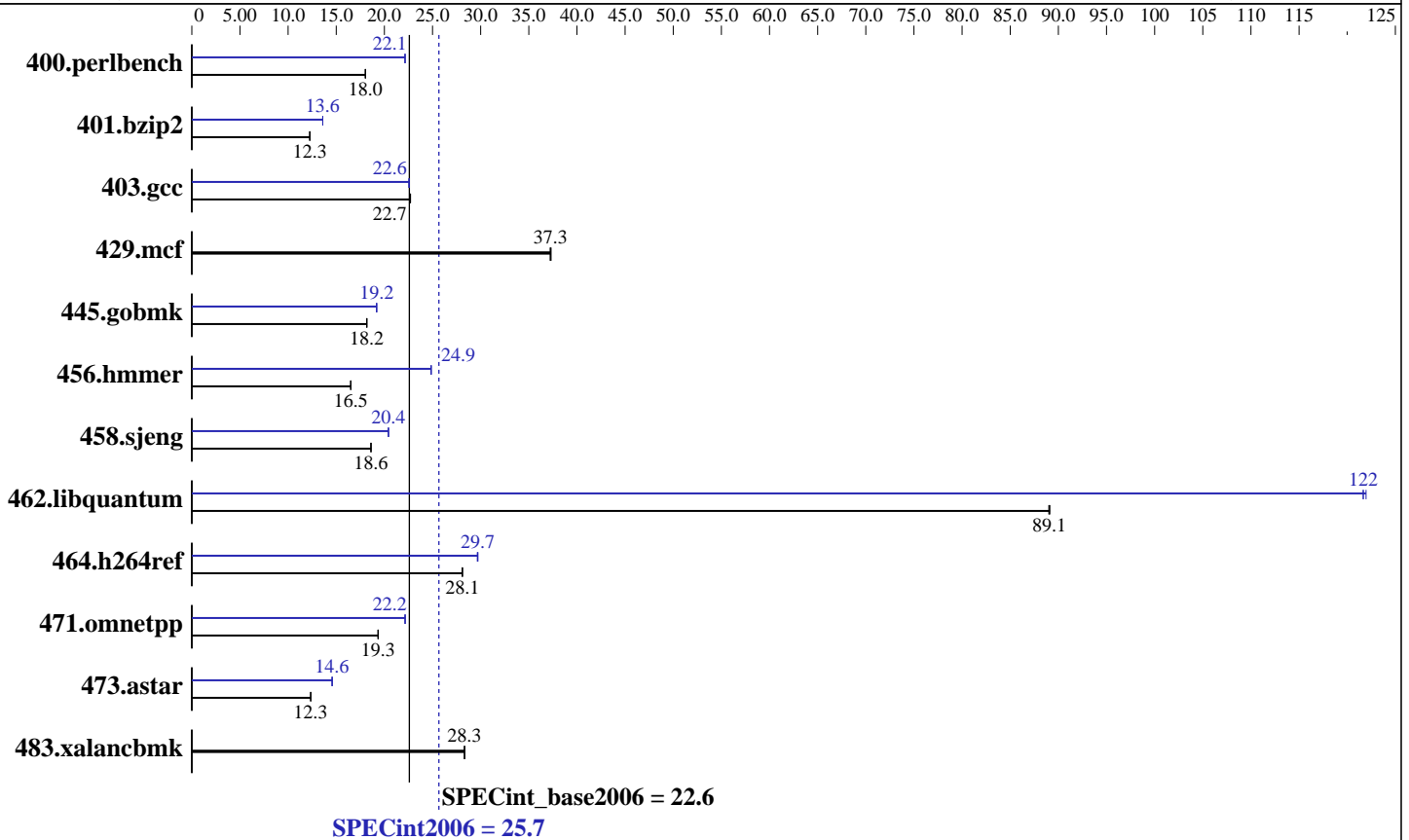SPECint_base2006 = 22.6

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

Test date: Oct-2009
Hardware Availability: Dec-2009
Software Availability: Jul-2009

Benchmark	Peak	Base
400.perlbench	22.1	18.0
401.bzip2	13.6	12.3
403.gcc	22.6	22.7
429.mcf		37.3
445.gobmk	19.2	18.2
456.hmmer	24.9	16.5
458.sjeng	20.4	18.6
462.libquantum	122	89.1
464.h264ref	29.7	28.1
471.omnetpp	22.2	19.3
473.astar	14.6	12.3
483.xalancbmk		28.3

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Hardware

CPU Name:	Intel Xeon X3430
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (4 x 2 GB DDR3-1333 DR UDIMM)
Disk Subsystem:	1 x 160 GB 7200 RPM SATA
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5
Compiler:	Intel C++ Compiler Professional Edition 11.1 for Linux Build 20090511 Package ID: l_cproc_p_11.1.040
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	542	18.0	**542**	**18.0**	543	18.0	**441**	**22.1**	441	22.1	441	22.2
401.bzip2	788	12.2	787	12.3	**787**	**12.3**	**710**	**13.6**	709	13.6	710	13.6
403.gcc	355	22.7	354	22.7	**354**	**22.7**	**357**	**22.6**	357	22.6	357	22.6
429.mcf	**245**	**37.3**	244	37.3	245	37.2	**245**	**37.3**	244	37.3	245	37.2
445.gobmk	**577**	**18.2**	577	18.2	577	18.2	546	19.2	547	19.2	**546**	**19.2**
456.hmmer	565	16.5	565	16.5	**565**	**16.5**	**375**	**24.9**	375	24.9	376	24.8
458.sjeng	**650**	**18.6**	651	18.6	650	18.6	592	20.4	593	20.4	**593**	**20.4**
462.libquantum	233	89.1	233	89.0	**233**	**89.1**	**170**	**122**	170	122	170	122
464.h264ref	**787**	**28.1**	787	28.1	788	28.1	**745**	**29.7**	745	29.7	746	29.7
471.omnetpp	323	19.3	323	19.4	**323**	**19.3**	282	22.1	**282**	**22.2**	282	22.2
473.astar	568	12.4	569	12.3	**568**	**12.3**	482	14.6	**482**	**14.6**	481	14.6
483.xalancbmk	**244**	**28.3**	244	28.3	243	28.4	**244**	**28.3**	244	28.3	243	28.4

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.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
The Dell PowerEdge R210 (Intel Xeon X3430, 2.40 GHz) and
the Bull NovaScale R410 F2 (Intel Xeon X3430, 2.40 GHz) models are electronically equivalent.
The results have been measured on a Dell PowerEdge R210 (Intel Xeon X3430, 2.40 GHz) model.

Base Compiler Invocation

C benchmarks:
        icc -m32

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Base Compiler Invocation (Continued)

C++ benchmarks:
    icpc -m32

Base Portability Flags

    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -inline-calloc
    -opt-malloc-options=3

C++ benchmarks:
    -xSSE4.2 -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 -m32

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks (except as noted below):
    icpc -m32

    473.astar: icpc -m64

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Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
   401.bzip2: -DSPEC_CPU_LP64
   456.hmmer: -DSPEC_CPU_LP64
   458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
   473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
               -prof-use(pass 2) -ansi-alias -opt-prefetch

   401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
               -prof-use(pass 2) -auto-ilp32 -opt-prefetch

     403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
               -opt-malloc-options=3

     429.mcf: basepeak = yes

   445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
               -ipo -no-prec-div -ansi-alias

   456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
               -ansi-alias -auto-ilp32

   458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
               -prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel
               -par-runtime-control -opt-prefetch -inline-calloc
               -opt-malloc-options=3

   464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
               -prof-use(pass 2) -unroll2 -ansi-alias
```

C++ benchmarks:

```
   471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
               -L/spec/cpu2006.1.1/lib -lsmartheap
```

Continued on next page

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Peak Optimization Flags (Continued)

473.astar: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-ansi-alias -opt-ra-region-strategy=routine -auto-ilp32`
`-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64`

483.xalancbmk: `basepeak = yes`

Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revA.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revA.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 03:51:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 December 2009.