SPEC® CINT2006 Result
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Bull SAS

NovaScale T860 E1
(Intel Xeon E5410, 2.33 GHz)

$SPECint^®\_rate2006 =$ 111
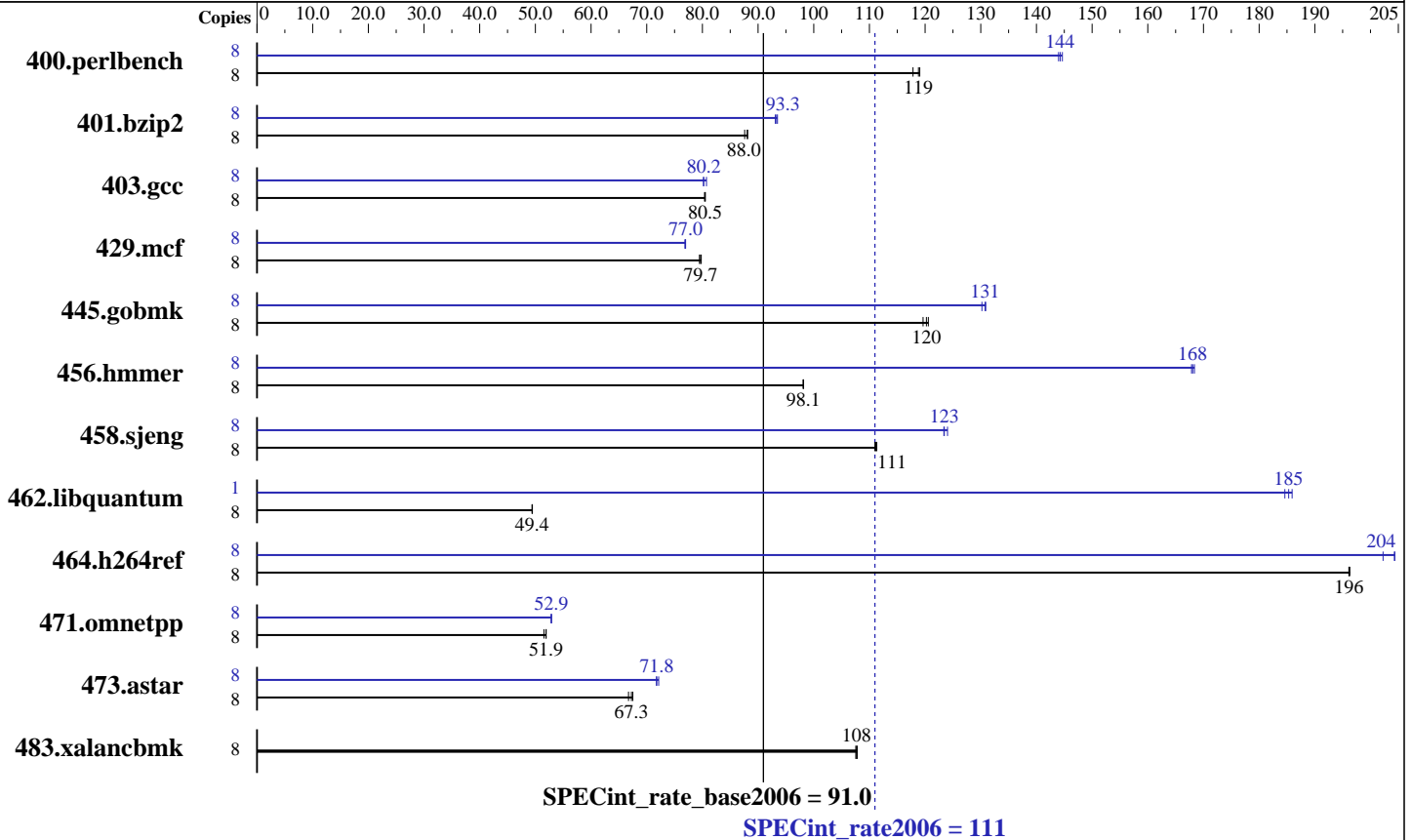
SPECint_rate_base2006 = 91.0

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

Test date: Jul-2008
Hardware Availability: Jan-2008
Software Availability: Nov-2007

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Hardware

CPU Name: Intel Xeon E5410
CPU Characteristics: 1333 MHz system bus
CPU MHz: 2333
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) FB-DIMM PC2-5300F ECC CL5
Disk Subsystem: 1x73 GB SAS, 15000 RPM
Other Hardware: None

Software

Operating System: SUSE LINUX Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel: Yes
File System: ext2
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15 SmartHeap library V8.1

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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	663	118	657	119	**658**	**119**		8	**542**	**144**	540	145	543	144
401.bzip2	8	881	87.6	**877**	**88.0**	876	88.1		8	829	93.1	826	93.5	**827**	**93.3**
403.gcc	8	800	80.5	**800**	**80.5**	801	80.4		8	**803**	**80.2**	798	80.7	803	80.2
429.mcf	8	914	79.8	**916**	**79.7**	918	79.5		8	948	77.0	949	76.9	**948**	**77.0**
445.gobmk	8	**698**	**120**	696	121	701	120		8	645	130	641	131	**642**	**131**
456.hmmer	8	761	98.1	760	98.2	**761**	**98.1**		8	**444**	**168**	443	168	445	168
458.sjeng	8	872	111	**871**	**111**	870	111		8	785	123	780	124	**784**	**123**
462.libquantum	8	3355	49.4	3351	49.5	**3354**	**49.4**		1	111	186	112	185	**112**	**185**
464.h264ref	8	902	196	**903**	**196**	903	196		8	875	202	**867**	**204**	866	204
471.omnetpp	8	**963**	**51.9**	970	51.5	963	51.9		8	946	52.8	946	52.9	**946**	**52.9**
473.astar	8	842	66.7	832	67.5	**835**	**67.3**		8	**782**	**71.8**	783	71.7	778	72.1
483.xalancbmk	8	513	108	**513**	**108**	512	108		8	513	108	**513**	**108**	512	108

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
KMP_STACKSIZE set to 64M
```

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
```

Base Compiler Invocation

C benchmarks:
```
icc
```

C++ benchmarks:
```
icpc
```

Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
```

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Base Portability Flags (Continued)

    483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -fast -inline-calloc -opt-malloc-options=3

C++ benchmarks:
    -xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
    -L/spec/cpu2006/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/cce/10.1.008/bin/icc
            -L/opt/intel/cce/10.1.008/lib
            -I/opt/intel/cce/10.1.008/include

    456.hmmer: /opt/intel/cce/10.1.008/bin/icc
            -L/opt/intel/cce/10.1.008/lib
            -I/opt/intel/cce/10.1.008/include

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

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Peak Optimization Flags

C benchmarks:

        400.perlbench: `-prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias`
                       `-prefetch`

          401.bzip2: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch`

            403.gcc: `-fast -inline-calloc -opt-malloc-options=3`

            429.mcf: `-fast -prefetch`

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

        456.hmmer: `-fast -unroll2 -ansi-alias -opt-multi-version-aggressive`

        458.sjeng: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4`

    462.libquantum: `-fast -unroll4 -Ob0 -prefetch`
                    `-opt-streaming-stores always -vec-guard-write`
                    `-opt-malloc-options=3 -parallel -par-runtime-control`

        464.h264ref: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2`
                     `-ansi-alias`

C++ benchmarks:

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

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

        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/EM64T_Intel101_int_flags.20090714.html`

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You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090714.xml

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

Tested with SPEC CPU2006 v1.0.
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