SPEC® CINT2006 Result

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Bull SAS

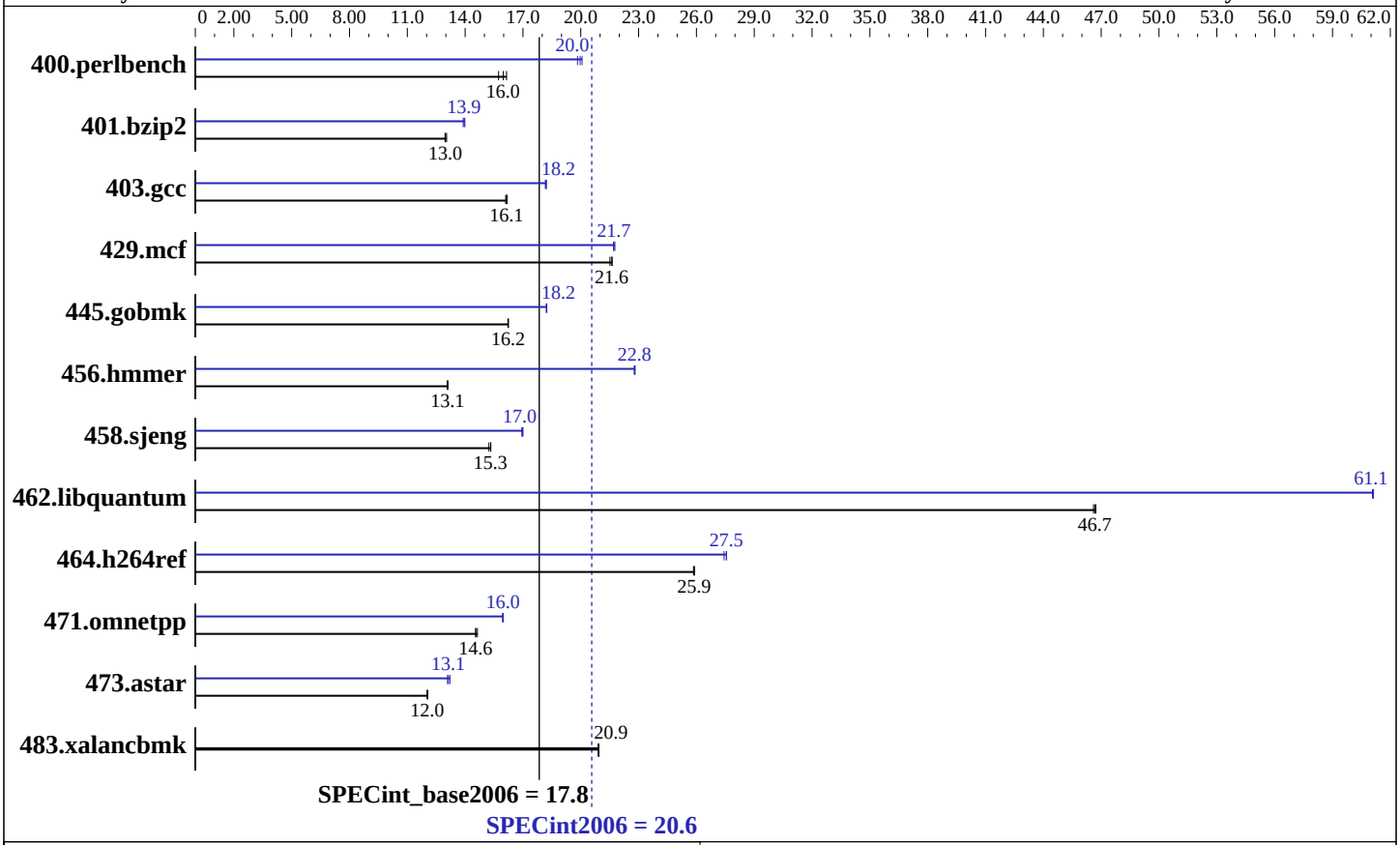
NovaScale R410 E1
(Intel Xeon X3320, 2.50 GHz)

SPECint®2006 = 20.6

SPECint_base2006 = 17.8

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

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



Hardware

CPU Name:	Intel Xeon X3320
CPU Characteristics:	1333 MHz system bus
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
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:	None
Other Cache:	None
Memory:	8 GB (4x2 GB) FB-DIMM PC2-6400E ECC CL6
Disk Subsystem:	1x80 GB SATA, 7200 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	621	15.7	**612**	**16.0**	605	16.2	**489**	**20.0**	487	20.1	493	19.8
401.bzip2	745	13.0	740	13.0	**743**	**13.0**	**692**	**13.9**	690	14.0	694	13.9
403.gcc	498	16.2	**499**	**16.1**	500	16.1	442	18.2	**442**	**18.2**	443	18.2
429.mcf	424	21.5	422	21.6	**422**	**21.6**	**420**	**21.7**	420	21.7	419	21.8
445.gobmk	646	16.2	647	16.2	**646**	**16.2**	575	18.2	576	18.2	**576**	**18.2**
456.hmmer	712	13.1	713	13.1	**713**	**13.1**	410	22.8	**409**	**22.8**	409	22.8
458.sjeng	794	15.2	789	15.3	**790**	**15.3**	714	16.9	**712**	**17.0**	712	17.0
462.libquantum	445	46.6	443	46.7	**444**	**46.7**	339	61.1	339	61.1	**339**	**61.1**
464.h264ref	855	25.9	**855**	**25.9**	856	25.8	803	27.6	**803**	**27.5**	807	27.4
471.omnetpp	427	14.6	430	14.5	**430**	**14.6**	391	16.0	392	15.9	**392**	**16.0**
473.astar	582	12.1	584	12.0	**583**	**12.0**	**535**	**13.1**	536	13.1	531	13.2
483.xalancbmk	330	20.9	330	20.9	**330**	**20.9**	330	20.9	330	20.9	**330**	**20.9**

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 null
```

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
The Bull NovaScale T810 E1(Intel Xeon X3320, 2.50 GHz),
the Bull NovaScale T830 E1(Intel Xeon X3320, 2.50 GHz) and
the Bull NovaScale R410 E1(Intel Xeon X3320, 2.50 GHz) models are electronically equivalent.
The results have been measured on a Bull NovaScale R410 E1(Intel Xeon X3320, 2.50 GHz) model.
```

Base Compiler Invocation

C benchmarks:
`icc`

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:
-fast -vec-guard-write -parallel -par-runtime-control

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

Continued on next page

Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

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 -auto-ilp32

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 -auto-ilp32

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`

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`

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