SPEC® CINT2006 Result

Bull SAS

NovaScale R480 E1
(Intel Xeon E7430, 2.13 GHz)

$SPECint®2006 =$ 20.0

$SPECint\_base2006 =$ 17.5

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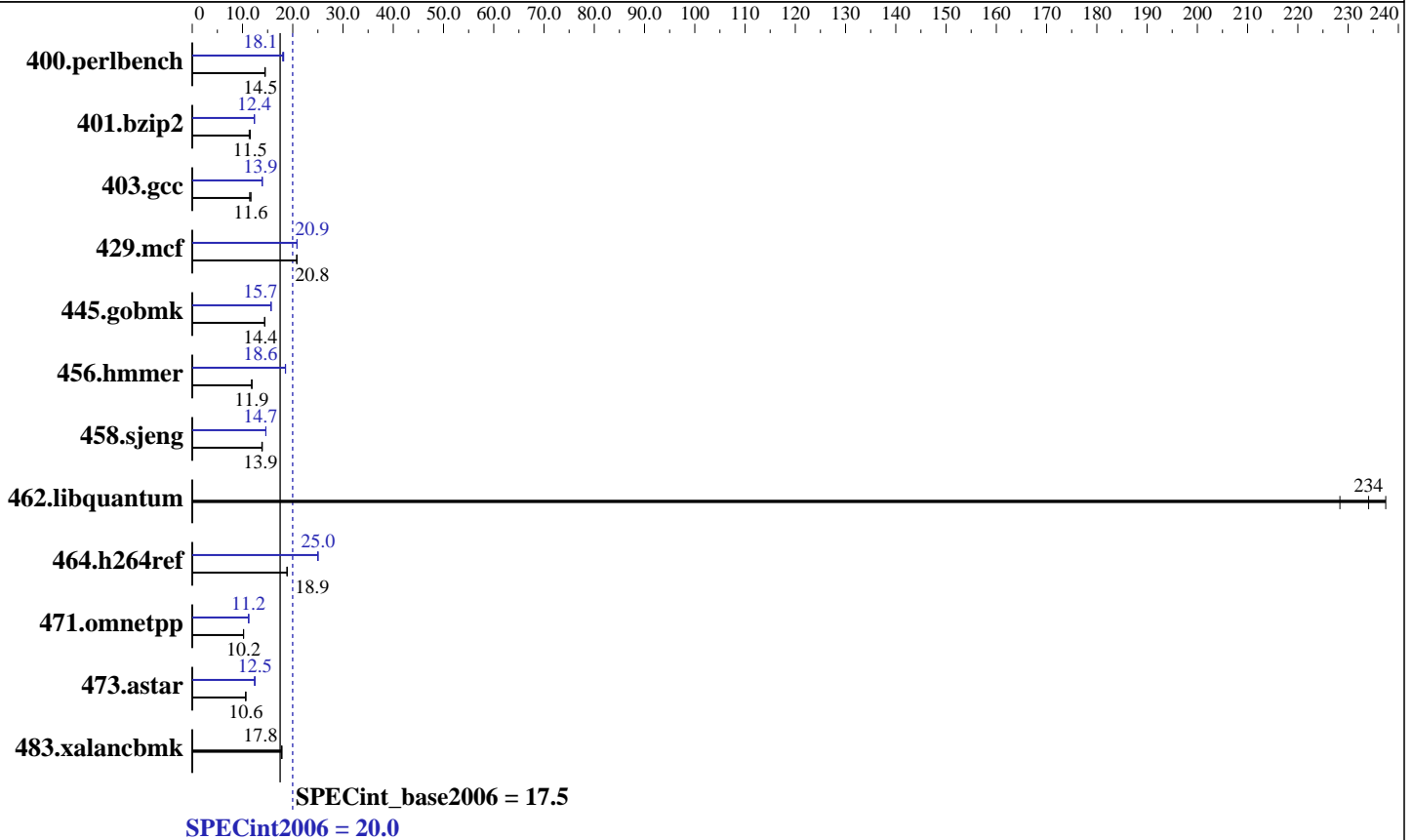**Test sponsor:** Bull SAS
Tested by: Bull SAS

Test date: Feb-2009
Hardware Availability: Nov-2008
Software Availability: Nov-2008

Benchmark	Peak	Base
400.perlbench	18.1	14.5
401.bzip2	12.4	11.5
403.gcc	13.9	11.6
429.mcf	20.9	20.8
445.gobmk	15.7	14.4
456.hmmer	18.6	11.9
458.sjeng	14.7	13.9
462.libquantum	234	
464.h264ref	25.0	18.9
471.omnetpp	11.2	10.2
473.astar	12.5	10.6
483.xalancbmk	17.8	

SPECint_base2006 = 17.5

SPECint2006 = 20.0

Hardware

CPU Name:	Intel Xeon E7430
CPU Characteristics:	1066 MHz system bus
CPU MHz:	2133
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:	6 MB I+D on chip per chip, 3 MB shared / 2 cores
L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (16 x 2GB DDR2-667 FBDIMM)
Disk Subsystem:	1x146 GB SAS, 10000 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 20080730 Package ID: l_cproc_b_11.0.042
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	**674**	**14.5**	676	14.4	672	14.5	543	18.0	**539**	**18.1**	537	18.2
401.bzip2	852	11.3	**838**	**11.5**	836	11.5	781	12.4	**780**	**12.4**	780	12.4
403.gcc	690	11.7	705	11.4	**692**	**11.6**	577	13.9	578	13.9	**578**	**13.9**
429.mcf	439	20.8	**438**	**20.8**	437	20.9	437	20.9	438	20.8	**437**	**20.9**
445.gobmk	**727**	**14.4**	727	14.4	727	14.4	668	15.7	**669**	**15.7**	670	15.7
456.hmmer	789	11.8	786	11.9	**787**	**11.9**	503	18.5	503	18.6	**503**	**18.6**
458.sjeng	**871**	**13.9**	867	14.0	874	13.9	826	14.6	**826**	**14.7**	826	14.7
462.libquantum	90.7	228	87.2	237	**88.5**	**234**	90.7	228	87.2	237	**88.5**	**234**
464.h264ref	1170	18.9	1174	18.8	**1172**	**18.9**	**884**	**25.0**	884	25.0	886	25.0
471.omnetpp	613	10.2	611	10.2	**613**	**10.2**	557	11.2	556	11.2	**557**	**11.2**
473.astar	**659**	**10.6**	659	10.7	660	10.6	562	12.5	567	12.4	**563**	**12.5**
483.xalancbmk	**387**	**17.8**	388	17.8	387	17.8	**387**	**17.8**	388	17.8	387	17.8

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:
Adjacent Cache Line Prefetch = Enabled
Hardware Prefetcher = Enabled
```

General Notes

```
The NEC Express5800/R140a-4(Intel Xeon E7430) and
the Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) models are electronically equivalent.
The results have been measured on a Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) 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:

```
-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/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
```

```
401.bzip2: /opt/intel/Compiler/11.0/042/bin/intel64/icc
        -L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
        -I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

```
456.hmmer: /opt/intel/Compiler/11.0/042/bin/intel64/icc
        -L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
        -I/opt/intel/Compiler/11.0/042/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) -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/spec/cpu2006.1.1/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/spec/cpu2006.1.1/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-revA.20090710.00.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.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-revA.20090710.00.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.xml

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