SPEC® CINT2006 Result

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Bull SAS

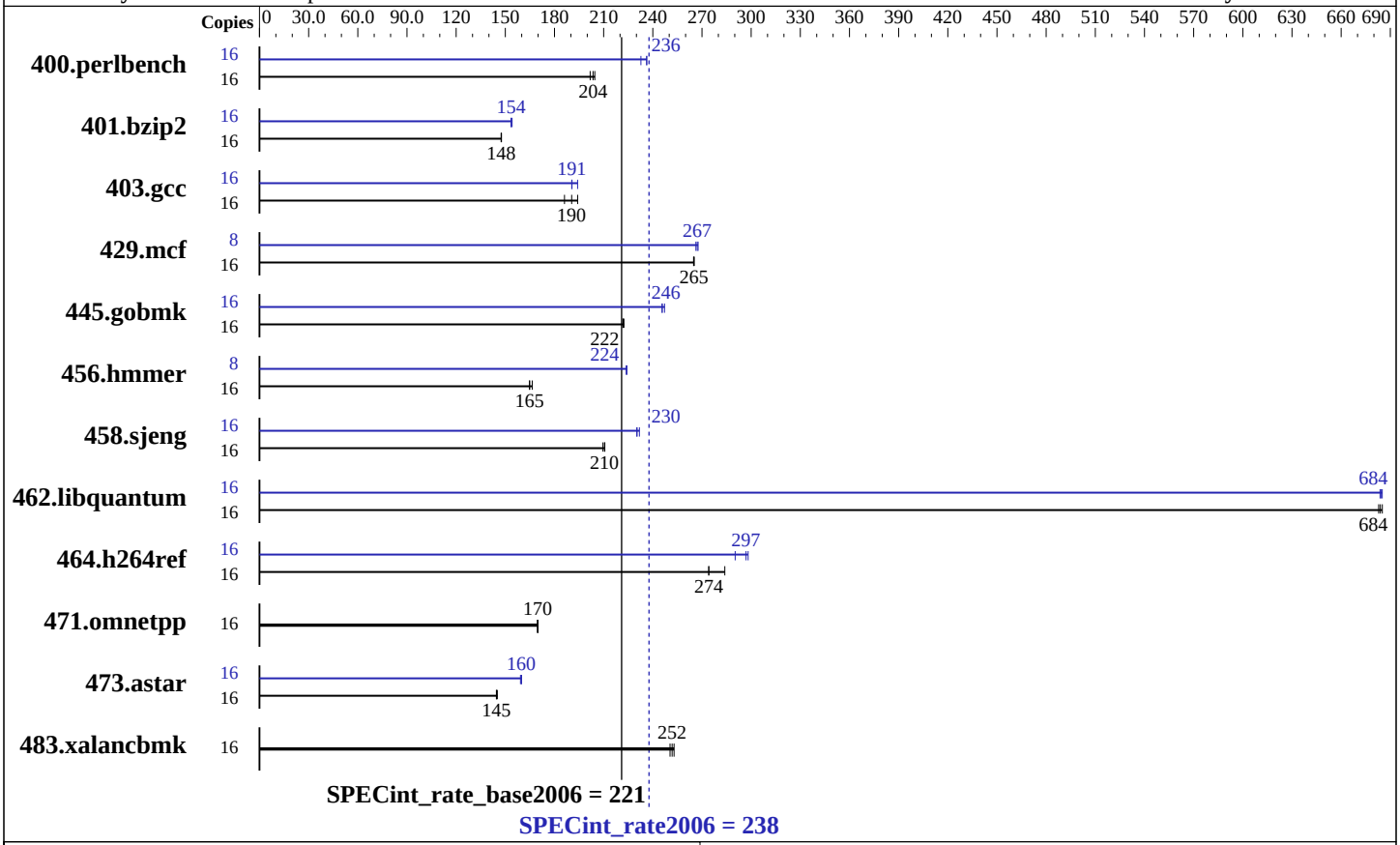
NovaScale R440 E2
(Intel Xeon X5550, 2.66 GHz)

SPECint®_rate2006 = 238

SPECint_rate_base2006 = 221

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

Test date: Apr-2009
Hardware Availability: Apr-2009
Software Availability: Feb-2009



Hardware

CPU Name:	Intel Xeon X5550
CPU Characteristics:	Intel Turbo Boost Technology up to 3.06 GHz
CPU MHz:	2667
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
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:	48 GB (12 X 4 GB PC3-8500R, 2 rank, CL7, ECC)
Disk Subsystem:	1x146.5 GB SAS, 15000 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.081
Auto Parallel:	No
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library 8.1 Binutils 2.18.50.0.7.20080502

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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	16	764	205	775	202	**768**	**204**	16	**662**	**236**	661	236	672	233
401.bzip2	16	1047	147	1046	148	**1046**	**148**	16	**1005**	**154**	1002	154	1006	154
403.gcc	16	692	186	**676**	**190**	663	194	16	676	191	**675**	**191**	664	194
429.mcf	16	550	265	**550**	**265**	551	265	8	274	266	273	268	**273**	**267**
445.gobmk	16	757	222	755	222	**756**	**222**	16	**683**	**246**	683	246	679	247
456.hmmer	16	897	166	**905**	**165**	906	165	8	333	224	**333**	**224**	333	224
458.sjeng	16	924	210	**920**	**210**	919	211	16	**840**	**230**	841	230	835	232
462.libquantum	16	**485**	**684**	485	683	484	685	16	484	685	485	684	**484**	**684**
464.h264ref	16	1247	284	**1291**	**274**	1292	274	16	1220	290	1188	298	**1193**	**297**
471.omnetpp	16	**589**	**170**	589	170	590	170	16	**589**	**170**	589	170	590	170
473.astar	16	774	145	777	145	**777**	**145**	16	**703**	**160**	702	160	705	159
483.xalancbmk	16	441	251	436	253	**438**	**252**	16	441	251	436	253	**438**	**252**

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.
 numactl was used to bind copies to the cores
```

Operating System Notes

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

Platform Notes

```
BIOS setting:
NUMA configuration: Enabled
```

General Notes

```
The NEC Express5800/R120a-1(Intel Xeon X5550),
the NEC Express5800/R120a-2(Intel Xeon X5550),
the Bull NovaScale R440 E2 (Intel Xeon X5550, 2.66 GHz) and
the Bull NovaScale R460 E2 (Intel Xeon X5550, 2.66 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/R120a-1(Intel Xeon X5550) model.
```

Base Compiler Invocation

C benchmarks:

```
icc
```

Continued on next page

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

C++ benchmarks:
-xSSE4.2 -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/11.0/081/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/081/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.0/081/bin/intel64/icc

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

473.astar: /opt/intel/Compiler/11.0/081/bin/intel64/icpc

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) -opt-prefetch -ansi-alias -auto-ilp32

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

429.mcf: -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) -opt-prefetch

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 -opt-malloc-options=3 -opt-prefetch

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: basepeak = yes

Continued on next page

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/opt/SmartHeap_8.1/lib64 -lsmartheap64`

483.xalancbmk: `basepeak = yes`

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-revF.html`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.20090710.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-revF.xml`
`http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.20090710.xml`

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