SPEC® CINT2006 Result
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Bull SAS

NovaScale R422
(Intel Xeon processor 5160,3.00GHz)

$SPECint®\_rate2006 =$ 63.8

$SPECint\_rate\_base2006 =$ 59.0
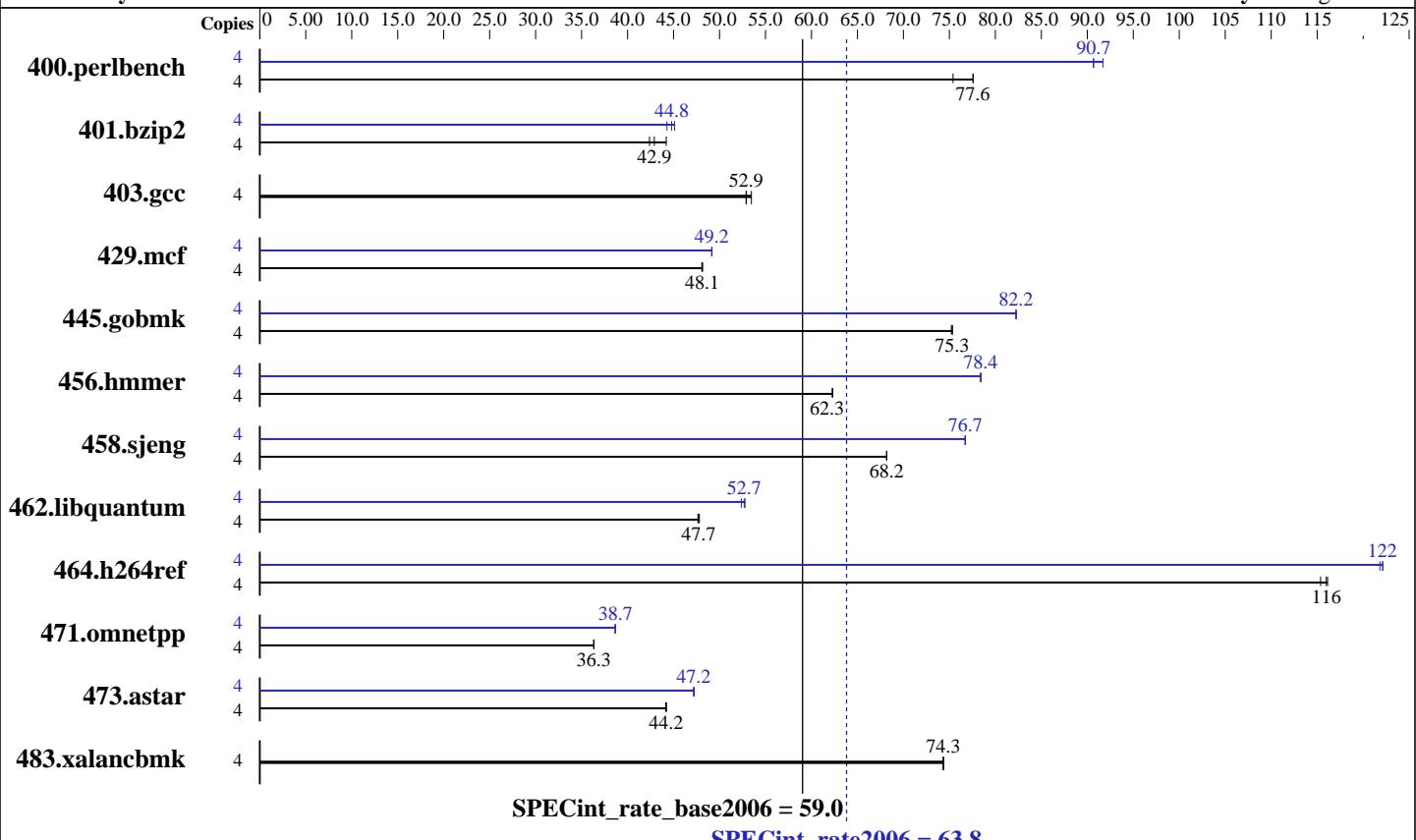
CPU2006 license: 20

Test sponsor: Bull SAS

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Benchmark	Copies	Base	Peak
400.perlbench	4	77.6	90.7
401.bzip2	4	42.9	44.8
403.gcc	4	52.9	
429.mcf	4	48.1	49.2
445.gobmk	4	75.3	82.2
456.hmmer	4	62.3	78.4
458.sjeng	4	68.2	76.7
462.libquantum	4	47.7	52.7
464.h264ref	4	116	122
471.omnetpp	4	36.3	38.7
473.astar	4	44.2	47.2
483.xalancbmk	4	74.3	

Hardware

CPU Name:	Intel Xeon 5160
CPU Characteristics:	3.00 GHz, 4 MB L2, 1333 MHz system bus
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1 to 2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (8x1 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 Kernel 2.6.16.21-0.8-smp for x86_64
Compiler:	Intel C++ Compiler for Linux32 version 10.0 Build 20070809 Package ID: l_cc_p_10.0.026
Auto Parallel:	No
File System:	ext3
System State:	Multi-user run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap library V8.1 Binutils 2.17.50.0.15

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Test date: Sep-2007
Hardware Availability: Aug-2007
Software Availability: Aug-2007

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	518	75.4	504	77.6	**504**	**77.6**		4	431	90.7	**431**	**90.7**	426	91.7
401.bzip2	4	911	42.4	**900**	**42.9**	873	44.2		4	872	44.3	856	45.1	**862**	**44.8**
403.gcc	4	602	53.5	**609**	**52.9**	609	52.9		4	602	53.5	**609**	**52.9**	609	52.9
429.mcf	4	**758**	**48.1**	759	48.1	757	48.2		4	**742**	**49.2**	742	49.1	742	49.2
445.gobmk	4	557	75.3	558	75.2	**557**	**75.3**		4	510	82.2	**510**	**82.2**	510	82.3
456.hmmer	4	599	62.3	**599**	**62.3**	599	62.3		4	476	78.4	**476**	**78.4**	476	78.4
458.sjeng	4	710	68.2	710	68.2	**710**	**68.2**		4	631	76.7	**631**	**76.7**	631	76.7
462.libquantum	4	1734	47.8	1739	47.7	**1736**	**47.7**		4	**1573**	**52.7**	1570	52.8	1582	52.4
464.h264ref	4	767	115	**763**	**116**	762	116		4	**725**	**122**	727	122	725	122
471.omnetpp	4	688	36.3	688	36.3	**688**	**36.3**		4	647	38.7	**647**	**38.7**	647	38.6
473.astar	4	636	44.1	635	44.2	**635**	**44.2**		4	**595**	**47.2**	595	47.2	594	47.2
483.xalancbmk	4	371	74.4	**371**	**74.3**	371	74.3		4	371	74.4	**371**	**74.3**	371	74.3

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' was used to bind processes to CPUs
The R422 is built with two identical (half size) motherboards.
Only one of the two motherboards was powered on during the test run.
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
    483.xalancbmk: -DSPEC_CPU_LINUX

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Base Optimization Flags

C benchmarks:
```
-fast
```

C++ benchmarks:
```
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/tmp/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/10.0.026/bin/icc
           -L/opt/intel/cce/10.0.026/lib
           -I/opt/intel/cce/10.0.026/include

456.hmmer: /opt/intel/cce/10.0.026/bin/icc
           -L/opt/intel/cce/10.0.026/lib
           -I/opt/intel/cce/10.0.026/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
```

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

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`

403.gcc: basepeak = yes

429.mcf: `-fast -prefetch`

445.gobmk: `-prof_gen(pass 1) -prof_use(pass 2) -xT -O2 -ipo -no-prec_div -ansi-alias`

456.hmmer: `-prof_gen(pass 1) -prof_use(pass 2) -fast -unroll2 -ansi-alias`

458.sjeng: `-prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4`

462.libquantum: `-prof_gen(pass 1) -prof_use(pass 2) -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always`

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: `-prof_gen(pass 1) -prof_use(pass 2) -xT -O3 -ipo -no-prec_div -ansi-alias -Wl,-z,muldefs -L/tmp/spec/cpu2006/lib -lsmartheap`

473.astar: Same as 471.omnetpp

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_Intel100_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/EM64T_Intel100_flags.xml

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

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