**Bull SAS**

NovaScale R430 F3 (Intel Xeon E5-2470, 2.30 GHz)

**SPECint\_rate2006 = 576**

**SPECint\_rate_base2006 = 555**

<table>
<thead>
<tr>
<th>SPECint Benchmark</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>32</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>32</td>
</tr>
<tr>
<td>403.gcc</td>
<td>32</td>
</tr>
<tr>
<td>429.mcf</td>
<td>32</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>32</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>32</td>
</tr>
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<td>458.sjeng</td>
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<tr>
<td>462.libquantum</td>
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<tr>
<td>464.h264ref</td>
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<tr>
<td>471.omnetpp</td>
<td>32</td>
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<tr>
<td>473.astar</td>
<td>32</td>
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<tr>
<td>483.xalancbmk</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware Properties</th>
<th>Software Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td>Operating System: SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.9-default</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td>Compiler: CIC++ Version 12.1.0.225 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td><strong>CPU MHZ:</strong></td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td><strong>FPU:</strong></td>
<td>File System: ext3</td>
</tr>
<tr>
<td><strong>CPU(s) enabled:</strong></td>
<td>System State: Run level 3 (add definition here)</td>
</tr>
<tr>
<td><strong>CPU(s) orderable:</strong></td>
<td>Base Pointers: 32-bit</td>
</tr>
<tr>
<td><strong>Primary Cache:</strong></td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td><strong>Secondary Cache:</strong></td>
<td>Other Software: Microquill SmartHeap V9.01</td>
</tr>
<tr>
<td><strong>L3 Cache:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Other Cache:</strong></td>
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</tr>
<tr>
<td><strong>Memory:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Disk Subsystem:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Other Hardware:</strong></td>
<td></td>
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</tbody>
</table>
Bull SAS
NovaScale R430 F3 (Intel Xeon E5-2470, 2.30 GHz)

SPECint_rate2006 = 576
SPECint_rate_base2006 = 555

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

Test date: Mar-2012
Hardware Availability: May-2012
Software Availability: Feb-2012

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>32</td>
<td>714</td>
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<td>728</td>
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<tr>
<td>401.bzip2</td>
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<td>988</td>
<td>313</td>
<td>998</td>
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<td>1011</td>
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<td>403.gcc</td>
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<td>576</td>
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<td>429.mcf</td>
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<tr>
<td>445.gobmk</td>
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<tr>
<td>456.hmmer</td>
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<tr>
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<tr>
<td>462.libquantum</td>
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<td>464.h264ref</td>
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<td>471.omnetpp</td>
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<tr>
<td>473.astar</td>
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<td>702</td>
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<tr>
<td>483.xalancbmk</td>
<td>32</td>
<td>406</td>
<td>543</td>
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<td>543</td>
<td>406</td>
<td>544</td>
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</tr>
</tbody>
</table>

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

Submit Notes
The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes
Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost set to Enabled
C States/C1E set to Enabled
Sysinfo program /root/CP2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on Slice Wed Mar 21 16:48:40 2012

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2470 0 @ 2.30GHz
2 "physical id"s (chips)
32 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
Bull SAS
NovaScale R430 F3 (Intel Xeon E5-2470, 2.30 GHz)

SPECint_rate2006 = 576
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

From /proc/meminfo
MemTotal: 49381468 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 2

uname -a:
Linux Slice 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012 (54ddfaf)
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 21 16:48 last=S

SPEC is set to: /root/CPU2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext3 266G 149G 104G 59% /

Additional information from dmidecode:
(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transient_hugepage/enabled
Filesystem page cache cleared with:
echo 1>/proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>
The Dell PowerEdge R420 and
the Bull NovaScale R430 F3 models are electronically equivalent.
Bull SAS

NovaScale R430 F3 (Intel Xeon E5-2470, 2.30 GHz)

**SPECint_rate2006 = 576**

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---

**General Notes (Continued)**

The results have been measured on a Dell PowerEdge R420 model.

---

**Base Compiler Invocation**

- C benchmarks:
  - `icc -m32`

- C++ benchmarks:
  - `icpc -m32`

---

**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 -opt-prefetch -opt-mem-layout-trans=3`

- C++ benchmarks:
  - `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`
  - `-Wl,-z,multidefs -L/smartheap -lsmartheap`

---

**Base Other Flags**

- C benchmarks:
  - `403.gcc: -Dalloca=_alloca`

---

**Peak Compiler Invocation**

- C benchmarks (except as noted below):
  - `icc -m32`

- `400.perlbench: icc -m64`
- `401.bzip2: icc -m64`
- `456.hmmer: icc -m64`

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Peak Compiler Invocation (Continued)

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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) -prof-use(pass 2)
-auto-1lp32

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-1lp32 -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-1lp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-1lp32

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/smartheap -lsmartheap

473.astar: basepeak = yes
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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.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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