### Bull SAS

**NovaScale R430 F3 (Intel Xeon E5-2430, 2.20 GHz)**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECint_rate2006</th>
<th>SPECint_rate_base2006</th>
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<tr>
<td>400.perlbench</td>
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<tr>
<td>401.bzip2</td>
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<td>403.gcc</td>
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<td>429.mcf</td>
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<td>456.hmmer</td>
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<tr>
<td>462.libquantum</td>
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<td>396</td>
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</tr>
</tbody>
</table>

**SPECint_rate2006 = 409**

**SPECint_rate_base2006 = 392**

### Hardware

- **CPU Name:** Intel Xeon E5-2430
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.70 GHz
- **CPU MHz:** 2200
- **FPU:** Integrated
- **CPU(s) enabled:** 12 cores, 2 chips, 6 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1 chip
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 256 KB I+D on chip per core
- **L3 Cache:** 15 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
- **Disk Subsystem:** 2 x 600 GB 15000 RPM SAS, RAID 1
- **Other Hardware:** None

### Software

- **Operating System:** SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.9-default
- **Compiler:** C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
- **Auto Parallel:** No
- **File System:** ext3
- **System State:** Run level 3 (add definition here)
- **Base Pointers:** 32-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** Microquill SmartHeap V9.01
Bull SAS

NovaScale R430 F3 (Intel Xeon E5-2430, 2.20 GHz)

SPECint_rate2006 = 409
SPECint_rate_base2006 = 392

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

Hardware Availability: May-2012
Software Availability: Feb-2012

Results Table

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<th>Ratio</th>
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</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/CPU2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 $6f2ebdff5032aaa42e583f96b07f99d3
running on slice Wed Feb 29 22:07:18 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E5-2430 0 @ 2.20GHz
  2 "physical id"s (chips)
  24 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The Continued on next page
SPEC CINT2006 Result

Bull SAS
NovaScale R430 F3 (Intel Xeon E5-2430, 2.20 GHz)

**SPECint_rate2006 = 409**
**SPECint_rate_base2006 = 392**

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<tr>
<th>CPU2006 license:</th>
<th>20</th>
<th>Test date:</th>
<th>Feb-2012</th>
</tr>
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<tr>
<td>Test sponsor:</td>
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<td>Hardware Availability:</td>
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<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
<td>Software Availability:</td>
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</tr>
</tbody>
</table>

Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
- cpu cores : 6
- siblings : 12
- physical 0: cores 0 1 2 3 4 5
- physical 1: cores 0 1 2 3 4 5
- cache size : 15360 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 Feb 29 22:06 last=S

SPEC is set to: /root/CPU2006-1.2
- Filesystem Type Size Used Avail Use% Mounted on
  - /dev/sda1 ext3 266G 28G 225G 12% /

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/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>/proc/sys/vm/drop_caches
runcspec command invoked through numactl i.e.:
numactl --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 E5-2430, 2.20 GHz)

SPECint_rate2006 = 409
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CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

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,muldefs -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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**SPEC CINT2006 Result**

**Bull SAS**

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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-ilp32`
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-ilp32 -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-ilp32`
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-ilp32`
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`

Continued on next page
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Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -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=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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