Bull SAS
NovaScale R480 F2 (Intel Xeon X7560, 2.27 GHz)

**SPECint\_rate2006 = 420**

**SPECint\_rate_base2006 = 400**

| Test date: | May-2011 |
| Test sponsor: | Bull SAS |
| Tested by: | Dell Inc. |

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Operating System: Red Hat Enterprise Linux 6.0 (x86_64), Kernel 2.6.32-71.el6.x86_64</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Compiler: Intel C++ Compiler XE for applications running on IA-32 Version 12.0.1.116 Build 20101116</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>FPU:</td>
<td>File System: ext3</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>Base Pointers: 32-bit</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>Other Software: Microquill SmartHeap V9.01</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td></td>
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</tbody>
</table>
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SPECint_rate2006 = 420
SPECint_rate_base2006 = 400

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tr>
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<td>985</td>
<td>317</td>
<td>981</td>
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<td>401.bzip2</td>
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<td>233</td>
<td>1324</td>
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<td>1324</td>
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<td>403.gcc</td>
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<td>779</td>
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<td>429.mcf</td>
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<td>548</td>
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<tr>
<td>445.gobmk</td>
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<td>362</td>
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<td>927</td>
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<td>456.hmmer</td>
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<td>458.sjeng</td>
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<td>348</td>
<td>1111</td>
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<td>1100</td>
<td>349</td>
<td>32</td>
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<td>462.libquantum</td>
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<td>360</td>
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<td>1850</td>
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<td>360</td>
<td>1840</td>
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<tr>
<td>464.h264ref</td>
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<td>471.omnetpp</td>
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<td>473.astar</td>
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<td>925</td>
<td>243</td>
<td>928</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>32</td>
<td>546</td>
<td>404</td>
<td>545</td>
<td>405</td>
<td>545</td>
<td>405</td>
<td>32</td>
<td>546</td>
<td>404</td>
<td>545</td>
</tr>
</tbody>
</table>

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
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 28800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)

General Notes

The Dell PowerEdge R910 and
the Bull NovaScale R480 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge R910 model.
Binaries were compiled on RHEL5.5
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NovaScale R480 F2 (Intel Xeon X7560, 2.27 GHz)

SPECint\_rate\_2006 = 420
SPECint\_rate\_base\_2006 = 400

CPU\_2006 license: 20
Test sponsor: Bull SAS
Tested by: Dell Inc.

Test date: May-2011
Hardware Availability: Jul-2011
Software Availability: Jan-2011

Base Compiler Invocation

C benchmarks:
icc -m32

C++ benchmarks:
icc -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
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/smartheap -lsmartheap
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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
458.sjeng: icc -m64

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Peak Compiler Invocation (Continued)

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)
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

403.gcc: -xSSE4.2 -ipo -o3 -no-prec-div
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -auto-ilp32

456.hmmer: -xSSE4.2 -ipo -o3 -no-prec-div -unroll2 -auto-ilp32
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.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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