**Bull SAS**

NovaScale R480 F2 (Intel Xeon E7-8867L, 2.13 GHz)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>489</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>455</td>
</tr>
</tbody>
</table>

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

**Test date**: Mar-2011  
**Hardware Availability**: Apr-2011  
**Software Availability**: Apr-2011

**Hardware**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E7-8867L</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 2.53 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2133</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>20 cores, 2 chips, 10 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>2 chips</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>30 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>256 GB (32 x 8 GB 4Rx8 PC3-8500R-7, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 500 GB 7200 RPM SAS 6Gb</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default</td>
</tr>
<tr>
<td>Compiler:</td>
<td>Intel C++ Compiler XE for applications running on IA-32, Version 12.0.1.116 Build 20101116</td>
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<tr>
<td>Auto Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>File System:</td>
<td>ext3</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
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<tr>
<td>Base Pointers:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V9.01</td>
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</tbody>
</table>
Bull SAS
NovaScale R480 F2 (Intel Xeon E7-8867L, 2.13 GHz)

SPECint_rate2006 = 489
SPECint_rate_base2006 = 455

Results Table

<table>
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<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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<th>Ratio</th>
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<tr>
<td>400.perlbench</td>
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<td>1060</td>
<td>369</td>
<td>1059</td>
<td>369</td>
<td>1061</td>
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<td>848</td>
<td>461</td>
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<td>401.bzip2</td>
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<td>1438</td>
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<td>1442</td>
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<td>40</td>
<td>1307</td>
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<td>403.gcc</td>
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<td>381</td>
<td>846</td>
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<tr>
<td>429.mcf</td>
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<td>986</td>
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<td>456.hmmer</td>
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<td>629</td>
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<td>402</td>
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<td>464.h264ref</td>
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<td>1028</td>
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<tr>
<td>483.xalancbmk</td>
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<td>440</td>
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<td>628</td>
<td>439</td>
<td>40</td>
<td>627</td>
<td>440</td>
<td>628</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 36000 > /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
**SPEC CINT2006 Result**

**Bull SAS**

NovaScale R480 F2 (Intel Xeon E7-8867L, 2.13 GHz)

SPECint\_rate\_2006 = 489  
SPECint\_rate\_base\_2006 = 455

**CPU2006 license:** 20  
**Test date:** Mar-2011  
**Test sponsor:** Bull SAS  
**Hardware Availability:** Apr-2011  
**Tested by:** Dell Inc.  
**Software Availability:** Apr-2011

---

**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  
- -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

Continued on next page
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: basepeak = yes

429.mcf: -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 -auto-ilp32

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)
  -unrolll4 -auto-ilp32
  -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

Continued on next page
SPEC CINT2006 Result

Bull SAS
NovaScale R480 F2 (Intel Xeon E7-8867L, 2.13 GHz)

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

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.20110517.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.20110517.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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