Bull SAS
NovaScale B280
(Intel Xeon L5420, 2.50 GHz)

SPECint_rate2006 = 116
SPECint_rate_base2006 = 94.6

Test sponsor: Bull SAS
Tested by: Bull SAS

Hardware
CPU Name: Intel Xeon L5420
CPU Characteristics: 1333 MHz system bus
CPU MHz: 2500
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1.2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB) FB-DIMM PC2-5300F ECC CL5
Disk Subsystem: 1x73 GB SAS, 10000 RPM
Other Hardware: None

Software
Operating System: SUSE LINUX Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel: Yes
File System: ext2
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15, SmartHeap library V8.1

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**SPEC CINT2006 Result**

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Test date: Jul-2008  
Hardware Availability: Jan-2008  
Software Availability: Nov-2007

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### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>622</td>
<td>126</td>
<td>614</td>
<td>127</td>
<td>618</td>
<td>544</td>
<td>793</td>
<td>97.3</td>
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<tr>
<td>401.bzip2</td>
<td>8</td>
<td><strong>829</strong></td>
<td><strong>93.2</strong></td>
<td>826</td>
<td>93.5</td>
<td>837</td>
<td>92.2</td>
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<td>97.3</td>
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<tr>
<td>403.gcc</td>
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<td>782</td>
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<td>782</td>
<td>82.4</td>
<td>782</td>
<td>82.3</td>
<td>777</td>
<td>82.9</td>
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<tr>
<td>429.mcf</td>
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<td>914</td>
<td>79.8</td>
<td><strong>913</strong></td>
<td><strong>79.9</strong></td>
<td>912</td>
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<td><strong>916</strong></td>
<td><strong>77.1</strong></td>
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<tr>
<td>445.gobmk</td>
<td>8</td>
<td>658</td>
<td><strong>128</strong></td>
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<td>128</td>
<td>658</td>
<td>127</td>
<td>607</td>
<td>138</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8</td>
<td>709</td>
<td>105</td>
<td><strong>709</strong></td>
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<td>708</td>
<td>105</td>
<td><strong>415</strong></td>
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<td>458.sjeng</td>
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<td>817</td>
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<td>822</td>
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<td>735</td>
<td>132</td>
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<td>462.libquantum</td>
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<td>3344</td>
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<td><strong>3348</strong></td>
<td><strong>49.5</strong></td>
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<tr>
<td>464.h264ref</td>
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<td>841</td>
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<td>211</td>
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<tr>
<td>471.omnetpp</td>
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<td>52.0</td>
<td><strong>960</strong></td>
<td><strong>52.1</strong></td>
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<td>52.8</td>
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<td>473.astar</td>
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<td><strong>69.2</strong></td>
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<td>69.1</td>
<td>789</td>
<td>71.2</td>
<td>752</td>
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<tr>
<td>483.xalancbmk</td>
<td>8</td>
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<td>111</td>
<td>497</td>
<td>111</td>
<td><strong>496</strong></td>
<td><strong>111</strong></td>
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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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**Operating System Notes**

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M

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**General Notes**

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer, for peak, are compiled in 64-bit mode
BIOS settings:
Hardware Prefetcher: Enabled
Adjacent Cache-Line Prefetch: Disabled

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**Base Compiler Invocation**

C benchmarks:
- icc

C++ benchmarks:
- icpc

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
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CPU2006 license: 20  Test date: Jul-2008
Test sponsor: Bull SAS  Hardware Availability: Jan-2008
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Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LINUX_IA32
- 462.libquantum: -DSPEC_CPU_LINUX
- 483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
- -fast  -inline-calloc  -opt-malloc-options=3

C++ benchmarks:
- -xT  -ipo  -O3  -no-prec-div  -Wl,-z,muldefs  
- -L/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/10.1.008/bin/icc  
  -L/opt/intel/cce/10.1.008/lib  
  -I/opt/intel/cce/10.1.008/include

- 456.hmmer: /opt/intel/cce/10.1.008/bin/icc  
  -L/opt/intel/cce/10.1.008/lib  
  -I/opt/intel/cce/10.1.008/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

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### SPECint_rate2006 = 116
### SPECint_rate_base2006 = 94.6

#### Peak Portability Flags (Continued)

- 483.xalancbmk: -DSPEC_CPU_LINUX

#### Peak Optimization Flags

**C benchmarks:**

- 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 -prefetch
- 403.gcc: -fast -inline-cALLOC -opt-mALLOC-options=3
- 429.mcf: -fast -prefetch
- 445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo
  -no-prec-div -ansi-alias
- 456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive
- 458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
- 462.libquantum: -fast -unroll4 -O0 -prefetch
  -opt-streaming-stores always -vec-guard-write
  -opt-mALLOC-options=3 -parallel -par-runtime-control
- 464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
  -ansi-alias

**C++ benchmarks:**

- 471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
  -no-prec-div -ansi-alias -opt-ra-region-strategy=block
  -Wl,-z,muldefs -L/spec/cpu2006/lib -lsmartheap
- 473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
  -no-prec-div -ansi-alias -opt-ra-region-strategy=routine
  -Wl,-z,muldefs -L/spec/cpu2006/lib -lsmartheap
- 483.xalancbmk: basepeak = yes

#### Peak Other Flags

**C benchmarks:**

Continued on next page
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Peak Other Flags (Continued)

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_Intel101_int_flags.20090713.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/EM64T_Intel101_int_flags.20090713.00.xml

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