Bull SAS
NovaScale R480 E1
(Intel Xeon E7420, 2.13 GHz)

SPECint®2006 = 19.2
SPECint_base2006 = 16.9

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: NEC Corporation

Test date: Nov-2008
Hardware Availability: Nov-2008

SPECint®2006 = 19.2
SPECint_base2006 = 16.9

Hardware
CPU Name: Intel Xeon E7420
CPU Characteristics: 1066 MHz system bus
CPU MHz: 2133
FPU: Integrated
CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip
CPU(s) orderable: 1,2,3,4 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 6 MB I+D on chip per chip, 3 MB shared / 2 cores
L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (16x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 15000RPM
Other Hardware: None

Software
Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2,
Kernel 2.6.16.60-0.21-smp
Compiler: Intel C++ Compiler 11.0 for Linux
Build 20080730 Package ID: l_cproc_b_11.0.044
Auto Parallel: Yes
File System: ext2
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap Library 8.1
Binutils 2.18.50.0.7.20080502
SPEC CINT2006 Result

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Results Table

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<th>Ratio</th>
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</tbody>
</table>

Peak

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

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"

Platform Notes

Bios settings:
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetch: Enabled

General Notes

The NEC Express5800/R140a-4 (Intel Xeon E7420) and
the Bull NovaScale R480 E1 (Intel Xeon E7420, 2.13 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/R140a-4 (Intel Xeon E7420) model.

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc
Bull SAS
NovaScale R480 E1
(Intel Xeon E7420, 2.13 GHz)

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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:
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/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/Compiler/11.0/044/bin/intel64/icc
-L/opt/intel/Compiler/11.0/044/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/044/ipp/em64t/include

456.hmmer: /opt/intel/Compiler/11.0/044/bin/intel64/icc
-L/opt/intel/Compiler/11.0/044/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/044/ipp/em64t/include

C++ benchmarks:
icpc

Peak Portability Flags
400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

Continued on next page
## SPEC CINT2006 Result

### Bull SAS

NovaScale R480 E1  
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- **Software Availability:** Nov-2008

### Peak Portability Flags (Continued)

- 462.libquantum: --DSPEC_CPU_LINUX  
- 483.xalancbmk: --DSPEC_CPU_LINUX

### Peak Optimization Flags

#### C benchmarks:

- **400.perlbench:**  
  ```bash
  -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
  -no-prec-div -static -ansi-alias -opt-prefetch
  ```
- **401.bzip2:**  
  ```bash
  -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
  -no-prec-div -static -auto-ilp32 -opt-prefetch
  -ansi-alias
  ```
- **403.gcc:**  
  ```bash
  -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
  -opt-malloc-options=3
  ```
- **429.mcf:**  
  ```bash
  -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
  ```
- **445.gobmk:**  
  ```bash
  -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo
  -no-prec-div -ansi-alias
  ```
- **456.hmmer:**  
  ```bash
  -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
  -ansi-alias -auto-ilp32
  ```
- **458.sjeng:**  
  ```bash
  -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
  -no-prec-div -static -unroll4
  ```
- **462.libquantum:** basepeak = yes
- **464.h264ref:**  
  ```bash
  -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
  -no-prec-div -static -unroll2 -ansi-alias
  ```

#### C++ benchmarks:

- **471.omnetpp:**  
  ```bash
  -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
  -no-prec-div -ansi-alias -opt-ra-region-strategy=block
  -m, -z, muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap
  ```
- **473.astar:**  
  ```bash
  -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
  -no-prec-div -ansi-alias -opt-ra-region-strategy=routine
  -m, -z, muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap
  ```
- **483.xalancbmk:** basepeak = yes
# SPEC CINT2006 Result

**Bull SAS**

NovaScale R480 E1  
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**Peak Other Flags**

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at:


You can also download the XML flags sources by saving the following links:


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For other inquiries, please contact webmaster@spec.org.

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