SPEC® CINT2006 Result

Dell Inc.

PowerEdge R910 (Intel Xeon E7520, 1.87 GHz)

SPECint®_rate2006 = 172
SPECint_rate_base2006 = 162

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
Test date: Apr-2011
Hardware Availability: Jul-2011
Software Availability: Jan-2011

CPU Name: Intel Xeon E7520
CPU Characteristics: Integrated
CPU MHz: 1866
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 18 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (32 x 8 GB 4Rx8 PC3-8500R-7, ECC, running at 800 MHz)
Disk Subsystem: 1 x 500 GB 7200 RPM SAS 6Gb
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
Compiler: Intel C++ Compiler XE for applications running on IA-32, Version 12.0.1.116 Build 20101116
Auto Parallel: No
File System: ext3
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01
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**Results Table**

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</table>

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

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**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 14400 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so

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**Platform Notes**

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

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**General Notes**

The Dell PowerEdge R910 and
the Bull NovaScale R480 P2 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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PowerEdge R910 (Intel Xeon E7520, 1.87 GHz)

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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

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Peak Compiler Invocation (Continued)

C++ benchmarks:
```plaintext
icpc -m32
```

---

Peak Portability Flags

```plaintext
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:
```plaintext
400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) 
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) 
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

```plaintext
401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) 
-03(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
```

```plaintext
403.gcc: basepeak = yes
```

```plaintext
429.mcf: -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 -auto-ilp32
```

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

```plaintext
456.hmmer: -xSSE4.2 -ipo -03 -no-prec-div -unroll2 -auto-ilp32 
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

```plaintext
458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) 
-03(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
```

```plaintext
462.libquantum: basepeak = yes
```

```plaintext
464.h264ref: basepeak = yes
```

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)
-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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