## SPEC CINT2006 Result

**Dell Inc.**

PowerEdge R410 (Intel Xeon E5603, 1.6 GHz)

### SPECint_rate2006 = 126

### SPECint_rate_base2006 = 118

**CPU2006 license:** 55  
**Test date:** Mar-2011  
**Test sponsor:** Dell Inc.  
**Hardware Availability:** Feb-2011

<table>
<thead>
<tr>
<th>Tested by:</th>
<th>Dell Inc.</th>
<th><strong>Software Availability:</strong></th>
<th>Jan-2011</th>
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</thead>
</table>

**CPU Name:** Intel Xeon E5603  
**CPU Characteristics:**
- **CPU MHz:** 1600
- **FPU:** Integrated
- **CPU(s) enabled:** 8 cores, 2 chips, 4 cores/chip
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 256 KB I+D on chip per core
- **Other Cache:** None
- **Memory:** 48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
- **Disk Subsystem:** 1 x 146 GB 15000 RPM SAS

**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

<table>
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<tr>
<th><strong>Auto Parallel:</strong></th>
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<th><strong>File System:</strong></th>
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<td><strong>System State:</strong></td>
<td>Run level 3 (multi-user)</td>
<td><strong>Base Pointers:</strong></td>
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<tr>
<td><strong>Peak Pointers:</strong></td>
<td>32/64-bit</td>
<td><strong>Other Software:</strong></td>
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### Benchmarks

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<tr>
<th>Benchmark</th>
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<td>400.perlbench</td>
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<tr>
<td>401.bzip2</td>
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<td>403.gcc</td>
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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.

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 3600 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes

Platform Notes

BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
Data Reuse = Disabled (Default = Enabled)

General Notes

Binaries were compiled on RHEL5.5
The Dell PowerEdge R410 and
the Bull NovaScale R430 F2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge R410 model.
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Software Availability: Jan-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

C benchmarks:
  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

Continued on next page
Peak Optimization Flags (Continued)

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -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 -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/smartheap -lsmartheap

473.astar: basepeak = yes
483.xalanchbmk: 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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