SPEC® CINT2006 Result

Dell Inc.

PowerEdge T110 II (Intel Core i3-2100, 3.10 GHz)  

**SPECint®_rate2006 =**  78.5  
**SPECint_rate_base2006 =**  75.5

<table>
<thead>
<tr>
<th>CPU2006 license: 55</th>
<th>Test date: Mar-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: Dell Inc.</td>
<td>Hardware Availability: May-2011</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Apr-2011</td>
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</tbody>
</table>

**Hardware**

CPU Name: Intel Core i3-2100  
CPU Characteristics:  
CPU MHz: 3100  
FPU: Integrated  
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core  
CPU(s) orderable: 1 chip  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 256 KB I+D on chip per core  
L3 Cache: 3 MB I+D on chip per chip  
Other Cache: None  
Memory: 8 GB (4 x 2 GB 2Rx4 PC3-10600R-9, ECC)  
Disk Subsystem: 1 x 146 GB 15000 RPM SAS  
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++ and Fortran Intel 64 Compiler XE for applications running on Intel 64, 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: SmartHeap 8.1 32-bit Library for Linux
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**Results Table**

<table>
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<th>Benchmark</th>
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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 900> /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 T110 II and the Bull NovaScale T810B P2 models are electronically equivalent.
The results have been measured on a Dell PowerEdge T110 II model
Binaries were compiled on RHEL5.5
**Dell Inc.**

PowerEdge T110 II (Intel Core i3-2100, 3.10 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:**

```
-xAAVX -ipo -O3 -no-prec-div -opt-prefetch
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

**C++ benchmarks:**

```
-xAAVX -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
Dell Inc.  
PowerEdge T110 II (Intel Core i3-2100, 3.10 GHz)  

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**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: `-xAVX (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: `-xAVX (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: `-xAVX -ipo -O3 -no-prec-div -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

429.mcf: `-xAVX (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: `-xAVX (pass 2) -prof-gen (pass 1) -prof-use (pass 2) -ansi-alias -auto-ilp32`

456.hmmer: `-xAVX -ipo -O3 -no-prec-div -unroll12 -auto-ilp32 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

458.sjeng: `-xAVX (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2) -unroll14 -auto-ilp32 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

462.libquantum: `basepeak = yes`

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Continued on next page
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**Peak Optimization Flags (Continued)**

464.h264ref:
- -xAVX(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:
- -xAVX(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-Linux64-Platform.20110524.00.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-Linux64-Platform.20110524.00.xml](http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.xml)

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