## SPEC® CFP2006 Result

**Dell Inc.**

**PowerEdge R720 (Intel Xeon E5-2630L, 2.00 GHz)**

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>65.3</th>
</tr>
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<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>62.0</td>
</tr>
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</table>

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

| SPECfp2006 = 65.3 |
| SPECfp_base2006 = 62.0 |

---

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E5-2630L</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 2.50 GHz</td>
</tr>
<tr>
<td>CPU MHZ:</td>
<td>2000</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>12 cores, 2 chips, 6 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.9-default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>ext3</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (add definition here)</td>
</tr>
</tbody>
</table>

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Continued on next page
### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base Pointers</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak Pointers</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Other Software</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>41.5</td>
<td>327</td>
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<td>38.0</td>
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<td>459.GemsFDTD</td>
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<td>465.tonto</td>
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<td>28.0</td>
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<td>481.wrf</td>
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<td>482.sphinx3</td>
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<td>51.0</td>
<td>368</td>
<td>52.9</td>
<td>368</td>
<td>52.9</td>
<td>370</td>
</tr>
</tbody>
</table>

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

### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

### Platform Notes

System Profile set to Custom  
CPU Power Management set to Maximum Performance  
Memory Frequency set to Maximum Performance  
Turbo Boost set to Enabled  
C States/C1E set to Enabled  
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6800  
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdf5f5032aaa42e583f96b07f99d3  
running on linux-i51c Mon Feb 20 17:28:44 2012

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## Dell Inc.

**PowerEdge R720 (Intel Xeon E5-2630L, 2.00 GHz)**

| SPECfp2006 = | 65.3 |
| SPECfp_base2006 = | 62.0 |

**CPU2006 license:** 55  
**Test date:** Feb-2012  
**Test sponsor:** Dell Inc.  
**Hardware Availability:** Mar-2012  
**Tested by:** Dell Inc.  
**Software Availability:** Feb-2012

### Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From `/proc/cpuinfo`

- **model name:** Intel(R) Xeon(R) CPU E5-2630L 0 @ 2.00GHz  
- 2 "physical id"s (chips)  
- 24 "processors"  
- cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)  
  - cpu cores : 6  
  - siblings : 12  
  - physical 0: cores 0 1 2 3 4 5  
  - physical 1: cores 0 1 2 3 4 5  
- cache size : 15360 KB

From `/proc/meminfo`

- MemTotal: 132089856 kB  
- HugePages_Total: 0  
- Hugepagesize: 2048 kB

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)
```

From `/etc/*release* /etc/*version*`

```
SuSE-release:  
SUSE Linux Enterprise Server 11 (x86_64)  
VERSION = 11  
PATCHLEVEL = 2
```

```
uname -a:  
Linux linux-i51c 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012 
(54ddfaf) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Feb 18 00:51 last=S
```

```
SPECT is set to: /root/cpu2006-1.2  
Filesyste Type Size Used Avail Use% Mounted on  
/dev/sda1  ext3 131G 7.8G 122G 6% /
```

### General Notes

Environment variables set by runspec before the start of the run:  
KMP_AFFINITY = "granularity=fine,scatter"  
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64"  
OMP_NUM_THREADS = "12"

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SPEC CFP2006 Result

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General Notes (Continued)

The Dell PowerEdge R720 and  
the Bull NovaScale R460 F3 models are electronically equivalent.  
The results have been measured on a Dell PowerEdge R720 model  
Transparent Huge Pages disabled with:  
echo never > /sys/kernel/mm/transparent_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop_caches  
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Base Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

Fortran benchmarks:  
ifort -m64

Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64  
416.gamess: -DSPEC_CPU_LP64  
433.milc: -DSPEC_CPU_LP64  
434.zeusmp: -DSPEC_CPU_LP64  
435.gromacs: -DSPEC_CPU_LP64 -nofor_main  
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main  
437.leslie3d: -DSPEC_CPU_LP64  
444.namd: -DSPEC_CPU_LP64  
447.dealII: -DSPEC_CPU_LP64  
450.soplex: -DSPEC_CPU_LP64  
453.povray: -DSPEC_CPU_LP64  
454.calculix: -DSPEC_CPU_LP64 -nofor_main  
459.GemsFDTD: -DSPEC_CPU_LP64  
465.tonto: -DSPEC_CPU_LP64  
470.lbm: -DSPEC_CPU_LP64  
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX  
482.sphinx3: -DSPEC_CPU_LP64
SPEC CFP2006 Result

Dell Inc.
PowerEdge R720 (Intel Xeon E5-2630L, 2.00 GHz)

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SPECfp_base2006 = 62.0

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Feb-2012
Hardware Availability: Mar-2012
Software Availability: Feb-2012

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Peak Compiler Invocation

C benchmarks:
icc   -m64

C++ benchmarks:
icpc  -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc   -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
 -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
 -static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
 -inline-level=0 -scalar-rep -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
 -inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
 -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
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**Dell Inc.**

**PowerEdge R720 (Intel Xeon E5-2630L, 2.00 GHz)**

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You can also download the XML flags sources by saving the following links:
- [Intel-ic12.1-official-linux64.20111122.xml](http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml)
- [Dell-Platform-Settings-V1.2-revA.20120328.xml](http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120328.xml)

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

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