Dell Inc.

PowerEdge T620 (Intel Xeon E5-2643, 3.30 GHz)

**SPECfp®2006 = 82.5**

**SPECfp_base2006 = 79.5**

**Hardware**

- CPU Name: Intel Xeon E5-2643
- CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
- CPU MHz: 3300
- FPU: Integrated
- CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
- CPU(s) orderable: 1,2 chip
- Primary Cache: 32 KB I + 32 KB D on chip per core
- Secondary Cache: 256 KB I+D on chip per core

**Software**

- Operating System: SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.9-default
- Compiler: 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
- Auto Parallel: Yes
- File System: ext3
- System State: Run level 3 (multi-user)

---

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info@spec.org

http://www.spec.org/
## SPEC CFP2006 Result

**Dell Inc.**

PowerEdge T620 (Intel Xeon E5-2643, 3.30 GHz)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Specfp2006</th>
<th>Specfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>= 82.5</td>
<td>= 79.5</td>
</tr>
</tbody>
</table>

CPU2006 license: 55  
Test sponsor: Dell Inc.  
Tested by: Dell Inc.  
L3 Cache: 10 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
Disk Subsystem: 1 x 250 GB 7200 RPM SATA  
Other Hardware: None  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: None  

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Seconds</td>
<td>Ratio</td>
</tr>
<tr>
<td>410.bwaves</td>
<td>36.7</td>
<td>370</td>
</tr>
<tr>
<td>416.gamess</td>
<td>620</td>
<td><strong>31.6</strong></td>
</tr>
<tr>
<td>433.milc</td>
<td>151</td>
<td><strong>60.6</strong></td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>71.9</td>
<td>127</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>188</td>
<td>37.9</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>36.1</td>
<td>331</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>49.6</td>
<td>189</td>
</tr>
<tr>
<td>444.namd</td>
<td>336</td>
<td><strong>23.8</strong></td>
</tr>
<tr>
<td>447.dealII</td>
<td>219</td>
<td>52.2</td>
</tr>
<tr>
<td>450.soplex</td>
<td>230</td>
<td><strong>36.2</strong></td>
</tr>
<tr>
<td>453.povray</td>
<td>119</td>
<td><strong>44.6</strong></td>
</tr>
<tr>
<td>454.calculix</td>
<td>207</td>
<td>39.8</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>83.6</td>
<td>127</td>
</tr>
<tr>
<td>465.tonto</td>
<td>240</td>
<td>41.0</td>
</tr>
<tr>
<td>470.lbm</td>
<td>32.6</td>
<td><strong>421</strong></td>
</tr>
<tr>
<td>481.wrf</td>
<td>145</td>
<td>77.1</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>271</td>
<td>71.8</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 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f9d3
- running on SUT Thu Feb 16 07:05:29 2012

This section contains SUT (System Under Test) info as seen by Continued on next page
**SPEC CFP2006 Result**

**Dell Inc.**

PowerEdge T620 (Intel Xeon E5-2643, 3.30 GHz)

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

---

**Platform Notes (Continued)**

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 E5-2643 0 @ 3.30GHz  
- 2 "physical id"s (chips)  
- 16 "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: 4  
  - siblings: 8  
  - physical 0: cores 0 1 2 3  
  - physical 1: cores 0 1 2 3  
- cache size: 10240 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 SUT 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012 (5ddfafa)  
  - x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 16 00:57 last=S

SPEC is set to: /root/CPU2006-1.2

- Filesystem Type Size Used Avail Use% Mounted on  
  - /dev/sda1 ext3 226G 69G 146G 32% /

Additional information from dmidecode:

(End of data from sysinfo program)

---

**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 = "8"  

The Dell PowerEdge T620 and

Continued on next page
Dell Inc.  

**PowerEdge T620 (Intel Xeon E5-2643, 3.30 GHz)**  

| Test sponsor: | Dell Inc. |  |
| Test date: | Feb-2012 |  |
| Hardware Availability: | Mar-2012 |  |
| Software Availability: | Feb-2012 |  |

**SPECfp2006 =** 82.5  
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### General Notes (Continued)

the Bull NovaScale T840 F3 models are electronically equivalent.  
The results have been measured on a Dell PowerEdge T620 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

<table>
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<tr>
<td>481.wrf</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
</tbody>
</table>

### Base Optimization Flags

C benchmarks:

```
-xAVX -ipo -03 -no-prec-div -static -parallel -opt-prefetch -ansi-alias
```

Continued on next page
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Base Optimization Flags (Continued)

C++ benchmarks:
- xAVX -ipo -03 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:
- xAVX -ipo -03 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
- xAVX -ipo -03 -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) -03(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
  -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -03 -no-prec-div -unroll2 -ansi-alias
  -parallel

Continued on next page
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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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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