Dell Inc.

Dell Precision T7500 (Intel Xeon W5580, 3.20 GHz)

**SPECfp®2006 = 41.1**

**SPECfp_base2006 = 38.9**

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Test date:** Mar-2009

**Tested by:** Dell Inc.

**Hardware Availability:** Apr-2009

**Software Availability:** May-2009

---

**Hardware**

- **CPU Name:** Intel Xeon W5580
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.46 GHz
- **CPU MHz:** 3200
- **FPU:** Integrated
- **CPU(s) enabled:** 8 cores, 2 chips, 4 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1,2 chips
- **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:** Red Hat Enterprise Linux Client release 5.3, Kernel 2.6.18-128.el5 on an x86_64
- **Compiler:** Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080
- **Auto Parallel:** Yes
- **File System:** ext2
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
# SPEC CFP2006 Result

## Dell Inc.

Dell Precision T7500 (Intel Xeon W5580, 3.20 GHz)

- **CPU2006 license:** 55
- **Test sponsor:** Dell Inc.
- **Tested by:** Dell Inc.
- **L3 Cache:** 8 MB I+D on chip per chip
- **Memory:** 24 GB (6 x 4 GB DDR3-1333R, CL9)
- **Disk Subsystem:** 1 x 146 GB 15000 RPM SAS
- **Peak Pointers:** 32/64-bit
- **Other Cache:** None
- **Other Memory:** None
- **Other Hardware:** None

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>152</td>
<td>89.4</td>
<td>139</td>
<td>97.5</td>
<td>139</td>
<td>97.5</td>
<td>140</td>
<td>97.1</td>
<td>151</td>
<td>89.7</td>
<td>139</td>
<td>97.7</td>
</tr>
<tr>
<td>416.gamess</td>
<td>777</td>
<td>25.2</td>
<td>776</td>
<td>25.2</td>
<td>777</td>
<td>25.2</td>
<td>705</td>
<td>27.8</td>
<td>723</td>
<td>27.1</td>
<td>704</td>
<td>27.8</td>
</tr>
<tr>
<td>433.milc</td>
<td>243</td>
<td>37.8</td>
<td>243</td>
<td>37.7</td>
<td>243</td>
<td>37.7</td>
<td>245</td>
<td>37.4</td>
<td>245</td>
<td>37.5</td>
<td>245</td>
<td>37.5</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>278</td>
<td>32.7</td>
<td>282</td>
<td>32.3</td>
<td>282</td>
<td>32.2</td>
<td>278</td>
<td>32.7</td>
<td>282</td>
<td>32.3</td>
<td>282</td>
<td>32.2</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>293</td>
<td>24.4</td>
<td>292</td>
<td>24.4</td>
<td>292</td>
<td>24.5</td>
<td>288</td>
<td>24.8</td>
<td>287</td>
<td>24.8</td>
<td>287</td>
<td>24.9</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>65.0</td>
<td>184</td>
<td>64.0</td>
<td>187</td>
<td>64.8</td>
<td>185</td>
<td>64.6</td>
<td>185</td>
<td>63.9</td>
<td>187</td>
<td>63.9</td>
<td>187</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>280</td>
<td>33.6</td>
<td>312</td>
<td>30.1</td>
<td>313</td>
<td>30.1</td>
<td>280</td>
<td>33.6</td>
<td>312</td>
<td>30.1</td>
<td>313</td>
<td>30.1</td>
</tr>
<tr>
<td>444.namd</td>
<td>395</td>
<td>20.3</td>
<td>393</td>
<td>20.4</td>
<td>393</td>
<td>20.4</td>
<td>397</td>
<td>20.2</td>
<td>397</td>
<td>20.2</td>
<td>397</td>
<td>20.2</td>
</tr>
<tr>
<td>447.dealII</td>
<td>317</td>
<td>36.1</td>
<td>317</td>
<td>36.1</td>
<td>317</td>
<td>36.1</td>
<td>300</td>
<td>38.2</td>
<td>300</td>
<td>38.2</td>
<td>300</td>
<td>38.2</td>
</tr>
<tr>
<td>450.soplex</td>
<td>273</td>
<td>30.5</td>
<td>273</td>
<td>30.5</td>
<td>274</td>
<td>30.4</td>
<td>266</td>
<td>31.4</td>
<td>267</td>
<td>31.3</td>
<td>266</td>
<td>31.3</td>
</tr>
<tr>
<td>453.povray</td>
<td>175</td>
<td>30.5</td>
<td>175</td>
<td>30.4</td>
<td>175</td>
<td>30.3</td>
<td>138</td>
<td>38.6</td>
<td>139</td>
<td>38.3</td>
<td>138</td>
<td>38.6</td>
</tr>
<tr>
<td>454.calculix</td>
<td>280</td>
<td>29.5</td>
<td>280</td>
<td>29.5</td>
<td>280</td>
<td>29.5</td>
<td>269</td>
<td>30.7</td>
<td>270</td>
<td>30.6</td>
<td>270</td>
<td>30.6</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>224</td>
<td>47.3</td>
<td>224</td>
<td>47.3</td>
<td>245</td>
<td>43.4</td>
<td>154</td>
<td>69.1</td>
<td>154</td>
<td>69.0</td>
<td>154</td>
<td>69.1</td>
</tr>
<tr>
<td>465.tonto</td>
<td>364</td>
<td>27.0</td>
<td>365</td>
<td>26.9</td>
<td>365</td>
<td>26.9</td>
<td>314</td>
<td>31.3</td>
<td>315</td>
<td>31.2</td>
<td>315</td>
<td>31.3</td>
</tr>
<tr>
<td>470.lbm</td>
<td>253</td>
<td>54.4</td>
<td>253</td>
<td>54.2</td>
<td>253</td>
<td>54.4</td>
<td>253</td>
<td>54.4</td>
<td>253</td>
<td>54.2</td>
<td>253</td>
<td>54.4</td>
</tr>
<tr>
<td>481.wrf</td>
<td>263</td>
<td>42.5</td>
<td>265</td>
<td>42.2</td>
<td>264</td>
<td>42.4</td>
<td>263</td>
<td>42.4</td>
<td>265</td>
<td>42.2</td>
<td>263</td>
<td>42.4</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>437</td>
<td>44.6</td>
<td>477</td>
<td>40.8</td>
<td>436</td>
<td>44.7</td>
<td>452</td>
<td>43.1</td>
<td>457</td>
<td>42.6</td>
<td>455</td>
<td>42.9</td>
</tr>
</tbody>
</table>

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

### Platform Notes

- BIOS Settings:
  - Hyper-Threading Technology set to ON.
  - Memory Node Interleaving set to NUMA.

### General Notes

- OMP_NUM_THREADS set to number of cores
- KMP_AFFINITY set to granularity=fine,scatter
- KMP_STACKSIZE set to 200M

Binaries were built on SUSE Linux Enterprise Server 10 (x86_64) SP2.
Dell Inc.

Dell Precision T7500 (Intel Xeon W5580, 3.20 GHz)

SPECfp2006 = 41.1
SPECfp_base2006 = 38.9

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

Test date: Mar-2009
Hardware Availability: Apr-2009
Software Availability: May-2009

Base Compiler Invocation

C benchmarks:
  icc

C++ benchmarks:
  icpc

Fortran benchmarks:
  ifort

Benchmarks using both Fortran and C:
  icc ifort

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
465.dealII: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
459.leslie3d: -DSPEC_CPU_LP64
466.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

Base Optimization Flags

C benchmarks:
  -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
  -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
  -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
  -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
# SPEC CFP2006 Result

## Dell Inc.

Dell Precision T7500 (Intel Xeon W5580, 3.20 GHz)

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>41.1</td>
<td>38.9</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test date:** Mar-2009  
**Hardware Availability:** Apr-2009  
**Software Availability:** May-2009

## Peak Compiler Invocation

C benchmarks (except as noted below):

```bash
icc
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):

```bash
icpc
450.soplex: icpc -m32
```

Fortran benchmarks:

```bash
ifort
```

Benchmarks using both Fortran and C:

```bash
icc ifort
```

## Peak 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
- 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

## Peak Optimization Flags

C benchmarks:

```bash
433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
        -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
        -fno-alias

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
```

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

### C++ benchmarks:

- **444.namd**:
  - `--xSSE4.2(pass 2) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--fno-alias --auto-ilp32

- **447.dealII**:
  - `--xSSE4.2(pass 2) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--unroll2 --ansi-alias --scalar-rep --opt-prefetch

- **450.soplex**:
  - `--xSSE4.2(pass 2) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--opt-malloc-options=3

- **453.povray**:
  - `--xSSE4.2(pass 2) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--unroll4 --ansi-alias

### Fortran benchmarks:

- **410.bwaves**:
  - `--xSSE4.2 -ipo -03 -no-prec-div -static -opt-prefetch
  - `--parallel

- **416.gamess**:
  - `--xSSE4.2( pass 2 ) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--unroll2 -Ob0 --ansi-alias --scalar-rep--

- **434.zeusmp**:
  - `basepeak = yes`

- **437.lelie3d**:
  - `basepeak = yes`

- **459.GemsFDTD**:
  - `--xSSE4.2( pass 2 ) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--unroll2 -Ob0 --opt-prefetch --parallel

- **465.tonto**:
  - `--xSSE4.2( pass 2 ) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--unroll4 --auto

### Benchmarks using both Fortran and C:

- **435.gromacs**:
  - `--xSSE4.2( pass 2 ) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--opt-prefetch --auto-ilp32

- **436.cactusADM**:
  - `--xSSE4.2( pass 2 ) --prof-gen(pass 1) -ipo(pass 2) -03(pass 2)
  - `--no-prec-div(pass 2) --static(pass 2) --prof-use(pass 2)
  - `--unroll2 --opt-prefetch --parallel --auto-ilp32

Continued on next page
### Dell Inc.

**Dell Precision T7500 (Intel Xeon W5580, 3.20 GHz)**

- **SPECfp2006 =** 41.1
- **SPECfp_base2006 =** 38.9

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>Dell Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test date:</td>
<td>Mar-2009</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Apr-2009</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>May-2009</td>
</tr>
</tbody>
</table>

#### Peak Optimization Flags (Continued)

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel -auto-ilp32`

The flags file that was used to format this result can be browsed at


You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/dell.flags.ic11.0.lin.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Originally published on 14 April 2009.