# SPEC® CFP2006 Result

## Dell Inc.

PowerEdge T110 II (Intel Xeon E3-1270 v2, 3.50 GHz)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
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<tbody>
<tr>
<td>70.3</td>
<td>68.3</td>
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</table>

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test date:** Mar-2012

**Hardware Availability:** May-2012

**Software Availability:** Feb-2012

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E3-1270 v2</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.90 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>3500</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>4 cores, 1 chip, 4 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1 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>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.9-default</td>
</tr>
<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 5</td>
</tr>
</tbody>
</table>

Continued on next page
**SPEC CFP2006 Result**

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<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>119</td>
<td>115</td>
<td>118</td>
<td>115</td>
<td>118</td>
<td>115</td>
</tr>
<tr>
<td>416.gamess</td>
<td>508</td>
<td>38.6</td>
<td>507</td>
<td>38.6</td>
<td>508</td>
<td>38.5</td>
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<tr>
<td>433.milc</td>
<td>122</td>
<td>75.5</td>
<td>122</td>
<td>75.5</td>
<td>122</td>
<td>75.4</td>
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<tr>
<td>434.zeusmp</td>
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<td>75.6</td>
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<tr>
<td>435.gromacs</td>
<td>170</td>
<td>41.9</td>
<td>171</td>
<td>41.8</td>
<td>170</td>
<td>41.9</td>
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<tr>
<td>436.cactusADM</td>
<td>61.8</td>
<td>193</td>
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<td>194</td>
<td>61.8</td>
<td>193</td>
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<tr>
<td>437.leslie3d</td>
<td>119</td>
<td>78.7</td>
<td>120</td>
<td>78.3</td>
<td>120</td>
<td>78.2</td>
</tr>
<tr>
<td>444.namd</td>
<td>294</td>
<td>27.3</td>
<td>294</td>
<td>27.3</td>
<td>294</td>
<td>27.2</td>
</tr>
<tr>
<td>447.dealII</td>
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<td>62.6</td>
<td>183</td>
<td>62.6</td>
<td>182</td>
<td>62.7</td>
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<tr>
<td>450.soplex</td>
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<td>46.3</td>
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<td>46.3</td>
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<td>453.povray</td>
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<td>168</td>
<td>49.2</td>
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<tr>
<td>459.GemsFDTD</td>
<td>175</td>
<td>60.7</td>
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<td>60.8</td>
<td>175</td>
<td>60.7</td>
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<tr>
<td>465.tonto</td>
<td>204</td>
<td>48.1</td>
<td>205</td>
<td>48.0</td>
<td>206</td>
<td>47.8</td>
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<tr>
<td>470.lbm</td>
<td>98.8</td>
<td>139</td>
<td>98.8</td>
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<td>98.8</td>
<td>139</td>
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<tr>
<td>481.wrf</td>
<td>118</td>
<td>94.5</td>
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<td>94.4</td>
<td>118</td>
<td>94.5</td>
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<tr>
<td>482.sphinx3</td>
<td>246</td>
<td>79.3</td>
<td>249</td>
<td>78.4</td>
<td>249</td>
<td>78.2</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**

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 $ $Date:: 2011-10-11 #$ 6f2ebdfff5032aaa42e583f96b07f99d3
running on linux-kx0 Thu Mar 8 00:17:00 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
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Dell Inc.
PowerEdge T110 II (Intel Xeon E3-1270 v2, 3.50 GHz)

SPECfp2006 = 70.3
SPECfp_base2006 = 68.3

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

Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E3-1270 V2 @ 3.50GHz
   1 "physical id"s (chips)
  8 "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
cache size : 8192 KB

From /proc/meminfo
MemTotal: 16326560 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-kyx0 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 5 Mar 7 22:55 last=3

SPEC is set to: /root/CPU2006-1.2
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/sda2 ext3 1.8T 41G 1.7T 3% /

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 = "4"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5

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General Notes (Continued)
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/transparent_hugepage/enabled
Filesysterm page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches

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
333.milc: -DSPEC_CPU_LP64
434.zuesmp: -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 -nofor_main
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64 -nofor_main
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
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

Base Optimization Flags

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

Continued on next page
Base Optimization Flags (Continued)

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) -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

C++ benchmarks:

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Peak Optimization Flags (Continued)

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-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)
-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:
410.bwaves: -xAVX -ipo -O3 -prec-div -opt-prefetch -parallel
-static
416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-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)
-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)
-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.calcui: -xAVX -ipo -O3 -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
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.xml
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Tested with SPEC CPU2006 v1.2.  