Dell Inc.  

PowerEdge M620 (Intel Xeon E5-2630, 2.30 GHz)  

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

CPU Name: Intel Xeon E5-2630  
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
CPU MHz: 2300  
FPU: Integrated  
CPU(s) enabled: 12 cores, 2 chips, 6 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 (add definition here)  

SPECfp®2006 = 70.9  
SPECfp_base2006 = 67.3
### Dell Inc.

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**CPU2006 license:** 55  
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<table>
<thead>
<tr>
<th>L3 Cache:</th>
<th>15 MB I+D on chip per chip</th>
<th>Base Pointers:</th>
<th>64-bit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Cache:</td>
<td>None</td>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Memory:</td>
<td>128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)</td>
<td>Other Software:</td>
<td>None</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 500 GB 7200 RPM SATA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Base Pointers:** 64-bit  
**Peak Pointers:** 32/64-bit

### SPECfp2006 Results

<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>40.3</td>
<td>337</td>
<td>39.9</td>
<td>341</td>
<td>39.9</td>
<td>341</td>
</tr>
<tr>
<td>416.gamess</td>
<td>803</td>
<td>24.4</td>
<td>797</td>
<td>24.6</td>
<td>800</td>
<td>24.5</td>
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<tr>
<td>433.milc</td>
<td>183</td>
<td>50.2</td>
<td>183</td>
<td>50.2</td>
<td>183</td>
<td>50.2</td>
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<tr>
<td>434.zeusmp</td>
<td>76.3</td>
<td>119</td>
<td>75.9</td>
<td>120</td>
<td>75.9</td>
<td>120</td>
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<tr>
<td>435.gromacs</td>
<td>266</td>
<td>26.8</td>
<td>264</td>
<td>27.1</td>
<td>268</td>
<td>26.6</td>
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<tr>
<td>436.cactusADM</td>
<td>35.4</td>
<td>338</td>
<td>35.4</td>
<td>338</td>
<td>35.4</td>
<td>337</td>
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<tr>
<td>437.leslie3d</td>
<td>59.0</td>
<td>159</td>
<td>59.0</td>
<td>159</td>
<td>59.0</td>
<td>159</td>
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<tr>
<td>444.namd</td>
<td>420</td>
<td>19.1</td>
<td>420</td>
<td>19.1</td>
<td>420</td>
<td>19.1</td>
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<tr>
<td>447.dealII</td>
<td>269</td>
<td>42.5</td>
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<td>42.3</td>
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<td>42.3</td>
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<td>450.soplex</td>
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<td>33.7</td>
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<td>33.7</td>
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<td>453.povray</td>
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<td>35.0</td>
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<td>35.3</td>
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<td>454.calculix</td>
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<td>31.1</td>
<td>261</td>
<td>31.6</td>
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<tr>
<td>459.GemsFDTD</td>
<td>86.3</td>
<td>123</td>
<td>86.5</td>
<td>123</td>
<td>86.3</td>
<td>123</td>
</tr>
<tr>
<td>465.tonto</td>
<td>342</td>
<td>28.8</td>
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<td>28.7</td>
<td>346</td>
<td>28.4</td>
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<tr>
<td>470.lbm</td>
<td>32.2</td>
<td>42.6</td>
<td>31.8</td>
<td>432</td>
<td>32.0</td>
<td>429</td>
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<tr>
<td>481.wrf</td>
<td>175</td>
<td>63.7</td>
<td>177</td>
<td>63.1</td>
<td>177</td>
<td>63.1</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>341</td>
<td>57.2</td>
<td>341</td>
<td>57.2</td>
<td>342</td>
<td>57.1</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 $ $Date:: 2011-10-11 #$ $Revision: 6800 $

Continued on next page
Dell Inc.

PowerEdge M620 (Intel Xeon E5-2630, 2.30 GHz)  

**SPECfn2006 = 70.9**  
**SPECfp_base2006 = 67.3**

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

**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"

**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 E5-2630 0 @ 2.30GHz
- 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: 132122692 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-8itg 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 Mar 12 05:43 last=S

SPEC is set to: /root/CPU2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext3 455G 73G 359G 17% /

Additional information from dmidecode:

(End of data from sysinfo program)
SPEC CFP2006 Result

Dell Inc.  
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Test date: Mar-2012  
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General Notes (Continued)

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

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

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

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 -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

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-ipt32

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) -unroll14 -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) -unroll12
           -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) -unroll12
            -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 -unroll14

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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PowerEdge M620 (Intel Xeon E5-2630, 2.30 GHz)  

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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.20120328.xml

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

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