## SPEC® CFP2006 Result

### Dell Inc.

**PowerEdge R330 (Intel Xeon E3-1225 v5, 3.30 GHz)**

<table>
<thead>
<tr>
<th>SPECfp°2006</th>
<th>SPECfp°_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>95.2</td>
<td>92.8</td>
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</table>

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test date:** Oct-2015  
**Hardware Availability:** Nov-2015  
**Software Availability:** Sep-2015

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
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<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E3-1225 v5</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.70 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>3300</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>4 cores, 1 chip, 4 cores/chip</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>
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<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
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</table>

### Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 3.12.28-4-default</td>
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<tr>
<td>Compiler</td>
<td>C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux</td>
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<tr>
<td>Auto Parallel</td>
<td>Yes</td>
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<tr>
<td>File System</td>
<td>ext4</td>
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<tr>
<td>System State</td>
<td>Run level 3 multi-user</td>
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Dell Inc.
### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>96.3</td>
<td>202</td>
<td>96.5</td>
<td>202</td>
<td>96.3</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

- BIOS settings: Virtualization Technology disabled
- System Profile set to Performance
- Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914

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

Continued on next page
Platform Notes (Continued)

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E3-1225 v5 @ 3.30GHz
  1 "physical id"s (chips)
  4 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
  cpu cores : 4
  siblings : 4
  physical 0: cores 0 1 2 3
  cache size : 8192 KB

From /proc/meminfo
  MemTotal: 66066084 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
  SUSE Linux Enterprise Server 12

From /etc/*release* /etc/*version*
  SuSE-release:
    SUSE Linux Enterprise Server 12 (x86_64)
    VERSION = 12
    PATCHLEVEL = 0
    # This file is deprecated and will be removed in a future service pack or
    # release.
    # Please check /etc/os-release for details about this release.
  os-release:
    NAME="SLES"
    VERSION="12"
    VERSION_ID="12"
    PRETTY_NAME="SUSE Linux Enterprise Server 12"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME=cpe:/o:suse:sles:12"

uname -a:
  Linux linux-3mqb 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
  (9879bd4) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 30 20:07

SPEC is set to: /root/cpu2006-1.2
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda2  ext4 451G 10G 440G 3% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
reads system data which is "intended to allow hardware to be accurately
determined", but the intent may not be met, as there are frequent changes to
Continued on next page
Dell Inc.

PowerEdge R330 (Intel Xeon E3-1225 v5, 3.30 GHz)

**SPECfp2006 =** 95.2
**SPECfp_base2006 =** 92.8

CPU2006 license: 55
Test date: Oct-2015
Test sponsor: Dell Inc.
Hardware Availability: Nov-2015
Tested by: Dell Inc.
Software Availability: Sep-2015

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**Platform Notes (Continued)**

- hardware, firmware, and the "DMTF SMBIOS" standard.
- BIOS Dell Inc. 0.3.16 09/09/2015
- Memory:
  - 1x 00AD00000000 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
  - 2x 00AD0000020B HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
  - 1x 00AD00000800 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

---

**General Notes**

- Environment variables set by runspec before the start of the run:
  - KMP_AFFINITY = "granularity=fine,compact,1,0"
  - LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"
  - OMP_NUM_THREADS = "4"

- Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
- Transparent Huge Pages enabled with:
  - echo always > /sys/kernel/mm/transparent_hugepage/enabled

---

**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.lesle3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64

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Continued on next page
### Dell Inc.

**PowerEdge R330 (Intel Xeon E3-1225 v5, 3.30 GHz)**

| SPECfp2006 | 95.2 |
| SPECfp_base2006 | 92.8 |

**CPU2006 license:** 55

**Test date:** Oct-2015

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**Hardware Availability:** Nov-2015

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### Base Portability Flags (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>447.dealII</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>450.soplex</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>453.povray</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>454.calculix</td>
<td>-DSPEC_CPU_LP64 -nofor_main</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>465.tonto</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>470 lbm</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<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:**

- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-parallel`  
- `-opt-prefetch`  
- `-ansi-alias`  

**C++ benchmarks:**

- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-opt-prefetch`  
- `-ansi-alias`  

**Fortran benchmarks:**

- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-parallel`  
- `-opt-prefetch`  

**Benchmarks using both Fortran and C:**

- `-xCORE-AVX2`  
- `-ipo`  
- `-O3`  
- `-no-prec-div`  
- `-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: basepeak = yes
   470.lbm: basepeak = yes
   482.sphinx3: basepeak = yes

C++ benchmarks:
   444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
               -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
               -par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias
               -auto-ilp32
   447.dealII: basepeak = yes
   450.soplex: basepeak = yes
   453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
               -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
               -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4
               -ansi-alias

Fortran benchmarks:
   410.bwaves: basepeak = yes
   416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
               -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
               -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
               -inline-level=0 -scalar-rep-
   434.zeusmp: basepeak = yes
   437.leslie3d: basepeak = yes
   459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
                  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
                  -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
                  -inline-level=0 -opt-prefetch -parallel
   465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
               -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
               -par-num-threads=1(pass 1) -prof-use(pass 2) -inline-calloc
               -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

Continued on next page
Dell Inc.
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Peak Optimization Flags (Continued)

435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: -xCORE-AVX2 -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-ic16.0-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml

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

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