Dell Inc.

PowerEdge R530 (Intel Xeon E5-2623 v4, 2.60 GHz)

**SPECfp_rate2006** = 357

**SPECfp_rate_base2006** = 350

| Test date: | Jun-2016 |
| Hardware Availability: | Jun-2016 |
| Software Availability: | Dec-2015 |

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2623 v4</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2600</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>8 cores, 2 chips, 4 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1,2 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>
<tr>
<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 16.0.2.181 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.2.181 of Intel Fortran Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>File System:</td>
<td>ext4</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

---

**SPECfp_rate_base2006** = 350;

**SPECfp_rate2006** = 357

---

**Copies**

410.bwaves | 16 |
416.gamess | 16 |
433.milc | 16 |
434.zeusmp | 16 |
435.gromacs | 16 |
436.cactusADM | 16 |
437.leslie3d | 16 |
444.namd | 16 |
447.dealII | 16 |
450.soplex | 16 |
453.povray | 16 |
454.calculix | 16 |
459.GemsFDTD | 16 |
465.tonto | 16 |
470.lbm | 16 |
481.wrf | 16 |
482.sphinx3 | 16 |

**continued on next page**
### SPEC CFP2006 Result

**Dell Inc.**

**PowerEdge R530 (Intel Xeon E5-2623 v4, 2.60 GHz)**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</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>16</td>
<td>628</td>
<td>346</td>
<td>628</td>
<td>346</td>
<td>628</td>
<td>346</td>
<td>628</td>
<td>346</td>
<td>628</td>
<td>346</td>
</tr>
<tr>
<td>416.gamess</td>
<td>16</td>
<td>993</td>
<td>316</td>
<td>989</td>
<td>317</td>
<td>963</td>
<td>324</td>
<td>968</td>
<td>324</td>
<td>966</td>
<td>324</td>
</tr>
<tr>
<td>433.mile</td>
<td>16</td>
<td>391</td>
<td>376</td>
<td>390</td>
<td>377</td>
<td>391</td>
<td>376</td>
<td>390</td>
<td>376</td>
<td>390</td>
<td>377</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>16</td>
<td>357</td>
<td>407</td>
<td>358</td>
<td>407</td>
<td>357</td>
<td>408</td>
<td>358</td>
<td>408</td>
<td>359</td>
<td>407</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>16</td>
<td>296</td>
<td>386</td>
<td>296</td>
<td>386</td>
<td>284</td>
<td>375</td>
<td>284</td>
<td>375</td>
<td>284</td>
<td>375</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>16</td>
<td>442</td>
<td>433</td>
<td>443</td>
<td>432</td>
<td>442</td>
<td>433</td>
<td>443</td>
<td>433</td>
<td>443</td>
<td>433</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>16</td>
<td>644</td>
<td>233</td>
<td>647</td>
<td>233</td>
<td>644</td>
<td>233</td>
<td>647</td>
<td>233</td>
<td>647</td>
<td>233</td>
</tr>
<tr>
<td>444.namd</td>
<td>16</td>
<td>506</td>
<td>254</td>
<td>505</td>
<td>253</td>
<td>503</td>
<td>255</td>
<td>503</td>
<td>255</td>
<td>503</td>
<td>255</td>
</tr>
<tr>
<td>447.dealII</td>
<td>16</td>
<td>359</td>
<td>509</td>
<td>360</td>
<td>509</td>
<td>359</td>
<td>509</td>
<td>360</td>
<td>509</td>
<td>360</td>
<td>509</td>
</tr>
<tr>
<td>450.soplex</td>
<td>16</td>
<td>568</td>
<td>235</td>
<td>571</td>
<td>234</td>
<td>568</td>
<td>235</td>
<td>568</td>
<td>235</td>
<td>568</td>
<td>235</td>
</tr>
<tr>
<td>453.povray</td>
<td>16</td>
<td>206</td>
<td>409</td>
<td>208</td>
<td>408</td>
<td>208</td>
<td>408</td>
<td>208</td>
<td>408</td>
<td>208</td>
<td>408</td>
</tr>
<tr>
<td>454.calculix</td>
<td>16</td>
<td>273</td>
<td>489</td>
<td>270</td>
<td>489</td>
<td>273</td>
<td>489</td>
<td>273</td>
<td>489</td>
<td>273</td>
<td>489</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>16</td>
<td>741</td>
<td>229</td>
<td>741</td>
<td>229</td>
<td>741</td>
<td>229</td>
<td>741</td>
<td>229</td>
<td>741</td>
<td>229</td>
</tr>
<tr>
<td>465.tonto</td>
<td>16</td>
<td>456</td>
<td>347</td>
<td>456</td>
<td>347</td>
<td>456</td>
<td>347</td>
<td>456</td>
<td>347</td>
<td>456</td>
<td>347</td>
</tr>
<tr>
<td>470.lbm</td>
<td>16</td>
<td>494</td>
<td>445</td>
<td>494</td>
<td>445</td>
<td>494</td>
<td>445</td>
<td>494</td>
<td>445</td>
<td>494</td>
<td>445</td>
</tr>
<tr>
<td>481.wrf</td>
<td>16</td>
<td>429</td>
<td>438</td>
<td>437</td>
<td>409</td>
<td>429</td>
<td>438</td>
<td>429</td>
<td>438</td>
<td>429</td>
<td>438</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>16</td>
<td>1008</td>
<td>311</td>
<td>1005</td>
<td>310</td>
<td>1008</td>
<td>310</td>
<td>1008</td>
<td>310</td>
<td>1008</td>
<td>310</td>
</tr>
</tbody>
</table>

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

**Submit Notes**

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

**Operating System Notes**

Stack size set to unlimited using "ulimit -s unlimited"

**Platform Notes**

BIOS settings:
Snoop Mode set to Cluster on Die
Virtualization Technology disabled

Continued on next page
Dell Inc.

PowerEdge R530 (Intel Xeon E5-2623 v4, 2.60 GHz)

**SPEC CFP2006 Result**

| SPECfp_rate2006 | 357 |
| SPECfp_rate_base2006 | 350 |

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Hardware Availability:** Jun-2016

**Software Availability:** Dec-2015

**Test date:** Jun-2016

**Platform Notes (Continued)**

System Profile set to custom

CPU Power Management set to Hardware P States

C States set to Autonomous

C1E disabled

Energy Efficient Turbo disabled

Uncore Frequency set to Dynamic

Energy Efficiency Policy set to Balanced Performance

Memory Patrol Scrub disabled

Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914

$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1

running on linux-g0aw Thu Jun 2 04:59:15 2016

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 E5-2623 v4@ 2.60GHz
- 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: 132185432 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

- SUSE Linux Enterprise Server 12 SP1

From /etc/*release* /etc/*version*

- SuSE-release:
- NAME="SLES"
- VERSION="12-SP1"
- VERSION_ID="12.1"
- PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
- ID="sles"
- ANSI_COLOR="0;32"

Continued on next page
SPEC CFP2006 Result

Dell Inc.

PowerEdge R530 (Intel Xeon E5-2623 v4, 2.60 GHz)

SPECfp_rate2006 = 357
SPECfp_rate_base2006 = 350

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

Test date: Jun-2016
Hardware Availability: Jun-2016
Software Availability: Dec-2015

Platform Notes (Continued)

CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
Linux linux-g0aw 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 1 18:38
SPEC is set to: /root/cpu2006-1.2

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda2      ext4  221G  8.7G  212G   4% /

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 hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 2.0.1 04/11/2016
Memory:
7x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz, configured at 2133 MHz
1x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz
4x Not Specified Not Specified

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Intel Core i7-4790K CPU + 32GB memory using RedHat EL 7.2 glibc 2.17
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
  icc  -m64

C++ benchmarks:
icpc  -m64

Continued on next page
SPEC CFP2006 Result

Dell Inc.

PowerEdge R530 (Intel Xeon E5-2623 v4, 2.60 GHz)

SPECfp_rate2006 = 357
SPECfp_rate_base2006 = 350

CPU2006 license: 55
Test sponsor: Dell Inc.
Test date: Jun-2016
Hardware Availability: Jun-2016
Tested by: Dell Inc.
Software Availability: Dec-2015

Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.games: -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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
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)  -opt-mem-layout-trans=3(pass 2)
    -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)  -opt-mem-layout-trans=3(pass 2)
    -prof-use(pass 2)  -unroll4  -ansi-alias

Fortran benchmarks:
  410.bwaves: basepeak = yes
Dell Inc.

PowerEdge R530 (Intel Xeon E5-2623 v4, 2.60 GHz)

SPECfp_rate2006 = 357
SPECfp_rate_base2006 = 350

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

Test date: Jun-2016
Hardware Availability: Jun-2016
Software Availability: Dec-2015

Peak Optimization Flags (Continued)

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: basepeak = yes
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) -unroll4 -auto
  -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -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) -opt-mem-layout-trans=3(pass 2)
  -prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes
454.calculix: basepeak = yes
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

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 v1.2.
Originally published on 9 August 2016.