Dell Inc.

PowerEdge R930 (Intel Xeon E7-4830 v3, 2.10 GHz)

SPECint®2006 = 50.8
SPECint_base2006 = 48.7

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

Hardware

CPU Name: Intel Xeon E7-4830 v3
CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 48 cores, 4 chips, 12 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
Disk Subsystem: 1 x 200 GB SAS6 SSD
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 3.12.28-4-default
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0
# SPEC CINT2006 Result

**Dell Inc.**

PowerEdge R930 (Intel Xeon E7-4830 v3, 2.10 GHz)

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- **CPU2006 license:** 55
- **Test date:** Apr-2015
- **Test sponsor:** Dell Inc.
- **Hardware Availability:** Jun-2015
- **Tested by:** Dell Inc.
- **Software Availability:** Oct-2014

## 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>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>314</td>
<td>31.1</td>
<td>313</td>
<td>31.3</td>
<td>312</td>
<td>31.3</td>
<td><strong>274</strong></td>
<td><strong>35.7</strong></td>
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<td>35.7</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>502</td>
<td><strong>19.2</strong></td>
<td>502</td>
<td>19.2</td>
<td>502</td>
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<td>403.gcc</td>
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<td>26.4</td>
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<td>26.4</td>
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<td>26.4</td>
<td><strong>297</strong></td>
<td><strong>27.1</strong></td>
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<tr>
<td>429.mcf</td>
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<td><strong>46.4</strong></td>
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<td>45.8</td>
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<td><strong>46.6</strong></td>
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<tr>
<td>445.gobmk</td>
<td>465</td>
<td><strong>22.5</strong></td>
<td>465</td>
<td>22.6</td>
<td>466</td>
<td>22.5</td>
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<td><strong>22.5</strong></td>
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<td>456.hmmer</td>
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<td>462.libquantum</td>
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<tr>
<td>464.h264ref</td>
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<td>571</td>
<td>38.8</td>
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<td><strong>38.8</strong></td>
<td>570</td>
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<td>571</td>
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<tr>
<td>471.omnetpp</td>
<td><strong>221</strong></td>
<td><strong>28.2</strong></td>
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<td>28.1</td>
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<tr>
<td>473.astar</td>
<td>269</td>
<td>26.1</td>
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<td><strong>25.9</strong></td>
<td>271</td>
<td>25.9</td>
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<td>26.1</td>
<td><strong>271</strong></td>
<td><strong>25.9</strong></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td><strong>139</strong></td>
<td><strong>49.7</strong></td>
<td>140</td>
<td>49.4</td>
<td>136</td>
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<td><strong>139</strong></td>
<td><strong>49.7</strong></td>
<td>140</td>
<td>49.4</td>
</tr>
</tbody>
</table>

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

## Submit Notes

The config file option 'submit' was used.

## Operating System Notes

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

## Platform Notes

- BIOS Settings:
  - Virtualization Technology disabled
  - System Profile set to Custom
  - CPU Power Management set to Maximum Performance
  - Memory Frequency set to Maximum Performance
  - Turbo Boost enabled
  - Energy Efficient Turbo disabled
  - C States disabled
  - Collaborative CPU Performance Control disabled
  - Memory Patrol Scrub disabled
  - Memory Refresh Rate set to 1x
  - Uncore Frequency set to Maximum
  - Energy Efficient Policy set to Performance
  - Monitor/MWait enabled

Sysinfo program

```
/root/Desktop/Performance/ic15.0_Aug29_2014/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
```

Continued on next page
SPEC CINT2006 Result

Dell Inc.

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CPU2006 license: 55
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Test date: Apr-2015
Hardware Availability: Jun-2015
Software Availability: Oct-2014

Platform Notes (Continued)

running on linux-6qvx Fri Apr 10 04:42:07 2015

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 E7-4830 v3 @ 2.10GHz
4 "physical id"s (chips)
96 "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 : 12
siblings : 24
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB

From /proc/meminfo
MemTotal: 529204240 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-6qvx 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 Apr 8 16:02 last=5

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Dell Inc.  
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Platform Notes (Continued)

SPEC is set to: /root/Desktop/Performance/ic15.0_Aug29_2014
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 181G 9.5G 171G 6% /

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. 1.0.1 [MRC_096] 03/27/2015
Memory:
32x 00AD00B300AD Not Specified 16 GB 2 rank 2133 MHz, configured at 1333 MHz
64x Not Specified Not Specified

(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/Desktop/Performance/ic15.0_Aug29_2014/libs/32:/root/Desktop/Performance/ic15.0_Aug29_2014/libs/64:/root/Desktop/Performance/ic15.0_Aug29_2014/sh"
OMP_NUM_THREADS = "48"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64

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Base Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks (except as noted below):
icpc -m64

471.omnetpp: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -ansi-alias

401.bzip2: basepeak = yes

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel  
-opt-prefetch -auto-p32

445.gobmk: basepeak = yes

456.hmmer: basepeak = yes

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes
**SPEC CINT2006 Result**

**Dell Inc.**

PowerEdge R930 (Intel Xeon E7-4830 v3, 2.10 GHz)

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**Peak Other Flags**

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revE.20150421.xml

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

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