**SPEC® CINT2006 Result**

**Dell Inc.**

PowerEdge R930 (Intel Xeon E7-4820 v3, 1.90 GHz)  

**SPECint®2006 = 36.6**  
**SPECint_base2006 = 35.2**

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

- **Test date:** Apr-2015  
- **Hardware Availability:** Jun-2015  
- **Software Availability:** Oct-2014

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### Hardware

- **CPU Name:** Intel Xeon E7-4820 v3  
- **CPU Characteristics:**
  - CPU MHz: 1900  
  - FPU: Integrated  
  - CPU(s) enabled: 40 cores, 4 chips, 10 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: 25 MB I+D on chip per chip  
  - Other Cache: None  
- **Memory:** 612 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)  
- **Disk Subsystem:** 2 x 300 GB 15000 RPM SAS6, RAID0  
- **Other Hardware:** None

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### 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
## Results Table

<table>
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<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
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<td>22.1</td>
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<td>447</td>
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<td>5.00</td>
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<td>483.xalancbmk</td>
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<td>35.8</td>
<td>192</td>
<td>35.9</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
- C1E 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
Dell Inc.

PowerEdge R930 (Intel Xeon E7-4820 v3, 1.90 GHz)

SPECint2006 = 36.6

SPECint_base2006 = 35.2

CPU2006 license: 55
Test sponsor: Dell Inc.
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Test date: Apr-2015
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Platform Notes (Continued)

running on linux-wq6y Thu Apr  9 08:55:27 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 E7-4820 v3 @ 1.90GHz
  4 "physical id"s (chips)
  80 "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 : 10
  siblings : 20
  physical 0: cores 0 1 2 3 4 8 9 10 11 12
  physical 1: cores 0 1 2 3 4 8 9 10 11 12
  physical 2: cores 0 1 2 3 4 8 9 10 11 12
  physical 3: cores 0 1 2 3 4 8 9 10 11 12
  cache size : 25600 KB

From /proc/meminfo

MemTotal:       529169424 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-wq6y 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 7 15:18 last=5

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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 366G 19G 346G 6% /

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. 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 = "40"

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.perlbuch: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
413.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: basepeak = yes

- 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
  -1L,-z,muldefs -L/sh -lsmartheap

- 473.astar: basepeak = yes

- 483.xalancbmk: basepeak = yes
### SPEC CINT2006 Result

**Dell Inc.**

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### Peak Other Flags

**C benchmarks:**

- gcc: `-Dalloca=_alloca`

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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

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For questions about this result, please contact the tester.

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

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