Dell Inc.

PowerEdge R930 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECint\textsubscript{rate2006} = 1970
SPECint\textsubscript{rate base2006} = 1890

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

Test date: Mar-2015
Hardware Availability: Jun-2015
Software Availability: Oct-2014

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>400.perlbench</td>
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</tr>
<tr>
<td>401.bzip2</td>
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<tr>
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<td>445.gobmk</td>
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<tr>
<td>471.omnetpp</td>
<td>933</td>
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<td>473.astar</td>
<td>1070</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>2120</td>
</tr>
</tbody>
</table>

CPU Name: Intel Xeon E7-8891 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz: 2800
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: 45 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 2 x 300 GB 15000 RPM SAS6, RAID0
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: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0
Dell Inc.  

PowerEdge R930 (Intel Xeon E7-8891 v3, 2.80 GHz)  

**SPEC CINT2006 Result**  

<table>
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</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**

Sysinfo program

```
/root/Desktop/Performance/ic15.0_Aug29_2014/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-wq6y Fri Mar 27 17:10:05 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 E7-8891 v3 @ 2.80GHz
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
```

Continued on next page
Dell Inc.
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Platform Notes (Continued)

siblings : 20
physical 0: cores 0 1 2 4 6 8 17 19 20 23
physical 1: cores 0 1 2 4 6 8 17 19 20 23
physical 2: cores 0 1 2 4 6 8 17 19 20 23
physical 3: cores 0 1 2 4 6 8 17 19 20 23
cache size : 46080 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 Mar 27 17:09 last=5
SPEC is set to: /root/Desktop/Performance/ic15.0_Aug29_2014

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. 1.0.0 [MRC_096] 03/27/2015
Memory:
32x 00AD00B300AD Not Specified 16 GB 2 rank 2133 MHz, configured at 1600 MHz
64x Not Specified Not Specified
Dell Inc.

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Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

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

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
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 -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks:
   icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
   -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
   -opt-mem-layout-trans=3

C++ benchmarks:
   -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
   -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
**SPEC CINT2006 Result**

Dell Inc.  
PowerEdge R930 (Intel Xeon E7-8891 v3, 2.80 GHz)  

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
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</tr>
</thead>
<tbody>
<tr>
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</table>

CPU2006 license: 55  
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Software Availability: Oct-2014

### Base Other Flags

C benchmarks:

- 403.gcc: -Dalloca=_alloca

### Peak Compiler Invocation

C benchmarks (except as noted below):

- icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
- 400.perlbench: icc -m64
- 401.bzip2: icc -m64
- 456.hmmer: icc -m64
- 458.sjeng: icc -m64

C++ benchmarks:

- icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

### Peak Portability Flags

- 400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
- 401.bzip2: -DSPEC_CPU_LP64
- 456.hmmer: -DSPEC_CPU_LP64
- 458.sjeng: -DSPEC_CPU_LP64
- 462.libquantum: -DSPEC_CPU_LINUX
- 483.xalancbmk: -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) -auto-ilp32
- 401.bzip2: -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 -auto-ilp32 -ansi-alias
- 403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

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Dell Inc.
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**Peak Optimization Flags (Continued)**

- 429.mcf: basepeak = yes
- 445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
  - ansi-alias -opt-mem-layout-trans=3
- 456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
- 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 -auto-ilp32
- 462.libquantum: basepeak = yes
- 464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -unroll2 -ansi-alias

**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)
  -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
  -L/sh -lsmartheap
- 473.astar: basepeak = yes
- 483.xalancbmk: basepeak = yes

---

**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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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Dell Inc.  
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For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.  
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