**SPEC® CINT2006 Result**

**Dell Inc.**

PowerEdge R930 (Intel Xeon E7-8894 v4, 2.40 GHz)  

<table>
<thead>
<tr>
<th>SPECint_rate2006 = Not Run</th>
<th>SPECint_rate_base2006 = 3760</th>
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**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test date:** Jan-2017  
**Hardware Availability:** Jan-2017  
**Software Availability:** Sep-2016

<table>
<thead>
<tr>
<th>SPECint Test</th>
<th>SPECint Rate</th>
<th>Copies</th>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>3230</td>
<td>192</td>
<td>CPU Name: Intel Xeon E7-8894 v4</td>
<td>Operating System: SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>1870</td>
<td>192</td>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz</td>
<td>Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux</td>
</tr>
<tr>
<td>403.gcc</td>
<td>2660</td>
<td>192</td>
<td>CPU MHz: 2400</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>429.mcf</td>
<td>4400</td>
<td>192</td>
<td>FPU: Integrated</td>
<td>File System: xfs</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>2790</td>
<td>192</td>
<td>CPU(s) enabled: 96 cores, 4 chips, 24 cores/chip, 2 threads/core</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>5510</td>
<td>192</td>
<td>CPU(s) orderable: 2,4 chip</td>
<td>Base Pointers: 32-bit</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>3030</td>
<td>192</td>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>42500</td>
<td>192</td>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Other Software: Microquill SmartHeap V10.2</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>4980</td>
<td>192</td>
<td>L3 Cache: 60 MB I+D on chip per chip</td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>1520</td>
<td>192</td>
<td>Other Cache: None</td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td>2070</td>
<td>192</td>
<td>Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133T-R, running at 1600 MHz)</td>
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<tr>
<td>483.xalancbmk</td>
<td>3690</td>
<td>192</td>
<td>Disk Subsystem: 1 x 480 GB SATA SSD</td>
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<tr>
<td></td>
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<td></td>
<td>Other Hardware: None</td>
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</tbody>
</table>

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**Software Availability:** Sep-2016
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Results Table

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<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
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</tr>
</tbody>
</table>

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
System Profile set to Custom
CPU Performance set to Maximum Performance
C States set to disabled
C1E disabled
Energy Efficient Turbo disabled
Uncore Frequency set to Dynamic
Energy Efficiency Policy set to Performance
Memory Patrol Scrub disabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-1bo5 Sun Jan  8 11:57:52 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
Continued on next page
Dell Inc.
PowerEdge R930 (Intel Xeon E7-8894 v4, 2.40 GHz)

SPECint_rate2006 = Not Run
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CPU2006 license: 55
Test sponsor: Dell Inc.
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Test date: Jan-2017
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Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
  model name: Intel(R) Xeon(R) CPU E7-8894 v4 @ 2.40GHz
  4 "physical id"s (chips)
  192 "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: 24
siblings: 48
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
  27 28 29
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
  27 28 29
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
  27 28 29
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
  27 28 29
cache size: 30720 KB

From /proc/meminfo
  MemTotal: 529059184 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:
    SUSE Linux Enterprise Server 12 (x86_64)
    VERSION = 12
    PATCHLEVEL = 1
    # 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-SP1"
    VERSION_ID="12.1"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
    (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 8 11:27
Dell Inc.

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Platform Notes (Continued)

SPEC is set to: /root/cpu2006-1.2  
Filesystmen    Type  Size  Used  Avail  Use% Mounted on  
/dev/sda2  
xfs  439G  14G  426G  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. 2.2.0 09/29/2016
Memory:
32x 00AD00B300AD HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1600 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:
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled by default
Filesystem page cache cleared with:

```
echo 1 > /proc/sys/vm/drop_caches
```
runspec command invoked through numactl i.e.:
```
numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:
```
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```
C++ benchmarks:
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

Base Portability Flags

```
400.perlbench: -D_FILE_OFFSET_BITS=64  -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
```

Continued on next page
# SPEC CINT2006 Result

## Dell Inc.

### PowerEdge R930 (Intel Xeon E7-8894 v4, 2.40 GHz)

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</tbody>
</table>

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### Base Portability Flags (Continued)

- 456.hmmer: -D_FILE_OFFSET_BITS=64
- 458.sjeng: -D_FILE_OFFSET_BITS=64
- 462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
- 464.h264ref: -D_FILE_OFFSET_BITS=64
- 471.omnetpp: -D_FILE_OFFSET_BITS=64
- 473.astar: -D_FILE_OFFSET_BITS=64
- 483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

### Base Optimization Flags

**C benchmarks:**

- -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
- -qopt-mem-layout-trans=3

**C++ benchmarks:**

- -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
- -qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

### Base Other Flags

**C benchmarks:**

- 403.gcc: -Dalloca=_alloca

---

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

- [Intel-ic17.0-official-linux64.html](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html)
- [Dell-Platform-Settings-V1.2-revD.20151006.html](http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.html)

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

- [Intel-ic17.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml)
- [Dell-Platform-Settings-V1.2-revD.20151006.xml](http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml)

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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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