### Dell Inc.

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

#### SPECint®_rate2006 = 1750

<table>
<thead>
<tr>
<th>Test sponsor:</th>
<th>Dell Inc.</th>
<th>Hardware Availability:</th>
<th>Jun-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
<td>Software Availability:</td>
<td>Oct-2014</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test date:</td>
<td>Apr-2015</td>
</tr>
</tbody>
</table>

#### SPECint_rate_base2006 = 1690

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E7-4830 v3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 2.70 GHz</td>
</tr>
<tr>
<td>CPU MHZ:</td>
<td>2100</td>
</tr>
<tr>
<td>FPU:</td>
<td></td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>48 cores, 4 chips, 12 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>2,4 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>L3 Cache:</td>
<td></td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td></td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 200 GB SAS6 SSD</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
<tr>
<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 12 3.12.28-4-default</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 15.0.0.090 of Intel C++ 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>
<tr>
<td>Base Pointers:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>

#### Hardware

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECint_rate_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>96</td>
<td>1260</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>96</td>
<td>803</td>
</tr>
<tr>
<td>403.gcc</td>
<td>96</td>
<td>1270</td>
</tr>
<tr>
<td>429.mcf</td>
<td>96</td>
<td>1200</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>96</td>
<td>1200</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>96</td>
<td>1280</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>96</td>
<td>1270</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>96</td>
<td>1190</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>96</td>
<td>2060</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>96</td>
<td>1270</td>
</tr>
<tr>
<td>473.astar</td>
<td>96</td>
<td>2850</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>96</td>
<td>2580</td>
</tr>
</tbody>
</table>

#### Software

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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>96</td>
<td>1850</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>96</td>
<td>1580</td>
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<tr>
<td>403.gcc</td>
<td>96</td>
<td>834</td>
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<tr>
<td>429.mcf</td>
<td>96</td>
<td>803</td>
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<tr>
<td>445.gobmk</td>
<td>96</td>
<td>1270</td>
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<td>1270</td>
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<tr>
<td>473.astar</td>
<td>96</td>
<td>2120</td>
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<td>483.xalancbmk</td>
<td>96</td>
<td>2120</td>
</tr>
</tbody>
</table>

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
**SPEC CINT2006 Result**

Dell Inc.

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

**SPECint_rate2006 = 1750**

**SPECint_rate_base2006 = 1690**

**CPU2006 license:** 55

**Test date:** Apr-2015

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Hardware Availability:** Jun-2015

**Software Availability:** Oct-2014

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copies</td>
<td>Seconds</td>
<td>Ratio</td>
</tr>
<tr>
<td>400.perlbench</td>
<td>96</td>
<td>743</td>
<td>1260</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>96</td>
<td>1154</td>
<td>803</td>
</tr>
<tr>
<td>403.gcc</td>
<td>96</td>
<td>610</td>
<td>1270</td>
</tr>
<tr>
<td>429.mcf</td>
<td>96</td>
<td>410</td>
<td>2140</td>
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<tr>
<td>445.gobmk</td>
<td>96</td>
<td>848</td>
<td>1190</td>
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<tr>
<td>456.hmmer</td>
<td>96</td>
<td>348</td>
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<td>458.sjeng</td>
<td>96</td>
<td>933</td>
<td>1250</td>
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<tr>
<td>462.libquantum</td>
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<td>113</td>
<td>17600</td>
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<tr>
<td>464.h264ref</td>
<td>96</td>
<td>1029</td>
<td>2060</td>
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<tr>
<td>471.omnetpp</td>
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<td>741</td>
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<td>473.astar</td>
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<td>723</td>
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<tr>
<td>483.xalancbmk</td>
<td>96</td>
<td>356</td>
<td>1860</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:
- 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
- CIE 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

Continued on next page
<table>
<thead>
<tr>
<th>Dell Inc.</th>
<th>SPEC CINT2006 Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerEdge R930 (Intel Xeon E7-4830 v3, 2.10 GHz)</td>
<td>SPECint_rate2006 = 1750</td>
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<tr>
<td></td>
<td>SPECint_rate_base2006 = 1690</td>
</tr>
<tr>
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</table>

**Platform Notes (Continued)**

```
/root/Desktop/Performance/ic15.0_Aug29_2014/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-6qvx Wed Apr  8 16:03:06 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
```

Continued on next page
Dell Inc.

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

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**Test sponsor:** Dell Inc.
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**Test date:** Apr-2015
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---

**Platform Notes (Continued)**

run-level 3 Apr 8 16:02 last=5

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% /

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:

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.:
numactl --interleave=all runspec <etc>

---

**Base Compiler Invocation**

C benchmarks:
icc -m32 -L/opt/intel/compiler_xe_2015/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/compiler_xe_2015/lib/ia32

---

**Base Portability Flags**

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

---
### Dell Inc. PowerEdge R930 (Intel Xeon E7-4830 v3, 2.10 GHz)

**SPECint_rate2006** = 1750  
**SPECint_rate_base2006** = 1690

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</tr>
<tr>
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<td>Software Availability: Oct-2014</td>
</tr>
</tbody>
</table>

#### 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`  
- `-W1,-z,muldefs`  
- `-L/sh`  
- `-lsmartheap`

#### Base Other Flags

**C benchmarks:**
- `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`
Dell Inc.
PowerEdge R930 (Intel Xeon E7-4830 v3, 2.10 GHz)  SPECint_rate2006 = 1750  SPECint_rate_base2006 = 1690

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

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -03 -no-prec-div

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 -03 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmarthread

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
Dell Inc.

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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.

Tested with SPEC CPU2006 v1.2.
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