### SPECint® CINT2006 Result

**Dell Inc.**

PowerEdge T630 (Intel Xeon E5-2643 v3, 3.40 GHz)

<table>
<thead>
<tr>
<th>SpecMark® CINT2006</th>
<th>SPECint®_rate2006 = 691</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006 = 668</td>
<td></td>
</tr>
</tbody>
</table>

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test date:** Jul-2014  
**Hardware Availability:** Sep-2014  
**Software Availability:** Sep-2014

#### Hardware
- **CPU Name:** Intel Xeon E5-2643 v3  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.70 GHz  
- **CPU MHz:** 3400  
- **FPU:** Integrated  
- **CPU(s) enabled:** 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
- **Primary Cache:** 32 KB I + 32 KB D on chip per core  
- **Secondary Cache:** 256 KB I+D on chip per core  
- **L3 Cache:** 20 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 256 GB (16 x 16GB 2Rx4 PC4-2133P-R)  
- **Disk Subsystem:** 1 x 300 GB 15000 RPM SAS  
- **Other Hardware:** None

#### Software
- **Operating System:** SUSE Linux Enterprise Server 11 (x86_64)  
  3.0.76-0.11-default  
- **Compiler:** C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
- **Auto Parallel:** No  
- **File System:** ext2  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 32-bit  
- **Peak Pointers:** 32/64-bit  
- **Other Software:** Microquill SmartHeap V10.0
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Results Table

<table>
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<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlb</td>
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<td>458</td>
<td>512</td>
<td>467</td>
<td>502</td>
<td>462</td>
<td>507</td>
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<tr>
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<td>690</td>
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<td>692</td>
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<td>510</td>
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<td>445.gobmk</td>
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<td>440</td>
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<td>437</td>
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<td>456.hmmer</td>
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<td>616</td>
<td>471</td>
<td>609</td>
<td>477</td>
<td>616</td>
<td>472</td>
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<tr>
<td>462.libquantum</td>
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<td>6780</td>
<td>72.8</td>
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<td>766</td>
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<td>473.astar</td>
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<td>483.xalancbmk</td>
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<td>759</td>
<td>217</td>
<td>764</td>
<td>218</td>
<td>760</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:
Snoop Mode set to Early Snoop
Virtualization Technology disabled
Execute Disable disabled
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Tue Jul  1 10:07:38 2014

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 E5-2643 v3 @ 3.40GHz
  2 "physical id"s (chips)
  24 "processors"

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Platform Notes (Continued)

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 : 6
- siblings : 12
- physical 0: cores 0 1 2 3 4 5
- physical 1: cores 0 1 2 3 4 5
- cache size : 20480 KB

From /proc/meminfo

- MemTotal: 264572216 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
SuSE-release:
   VERSION = 11
   PATCHLEVEL = 3

uname -a:
   Linux linux 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990)
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jul 1 10:02 last=S

SPEC is set to: /root/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext2 222G 9.8G 211G 5% /

Additional information from dmidecode:

   BIOS Dell Inc. 0.3.25 06/26/2014
   Memory:
      16x 00AD00B300AD HMA42GR7MFR4N-TFTD 16 GB 2133 MHz
      8x 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/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
   echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
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General Notes (Continued)

    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

C++ benchmarks:  
    icpc -m32

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

Base Other Flags

C benchmarks:  
    403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):  
    icc -m32

400.perlbench: icc -m64

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Peak Compiler Invocation (Continued)

401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

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: basepeak = yes
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

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### Peak Optimization Flags (Continued)

464.h264ref: 
- \(-x\text{CORE-AVX2}\) (pass 2)
- \(-\text{prof-gem}\) (pass 1)
- \(-\text{ipo}\) (pass 2)
- \(-\text{o3}\) (pass 2)
- \(-\text{no-prec-div}\) (pass 2)
- \(-\text{prof-use}\) (pass 2)
- \(-\text{unroll12}\)
- \(-\text{ansi-alias}\)

C++ benchmarks:

471.omnetpp: 
- \(-x\text{CORE-AVX2}\) (pass 2)
- \(-\text{prof-gem}\) (pass 1)
- \(-\text{ipo}\) (pass 2)
- \(-\text{o3}\) (pass 2)
- \(-\text{no-prec-div}\) (pass 2)
- \(-\text{prof-use}\) (pass 2)
- \(-\text{ansi-alias}\)
- \(-\text{opt-ra-region-strategy=block}\)
- \(-\text{w1, -z, muldefs}\)
- \(-\text{L/sh -lsmartheap}\)

473.astar: \(\text{basepeak} = \text{yes}\)

483.xalanchbmk: \(\text{basepeak} = \text{yes}\)

### Peak Other Flags

C benchmarks:

403.gcc: 
- \(-\text{Dalloca=_alloca}\)

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


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


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