## SPEC® CINT2006 Result

Dell Inc. PowerEdge R740 (Intel Xeon Platinum 8180M, 2.50 GHz)

<table>
<thead>
<tr>
<th>CPU2006 license: 55</th>
<th>Test date:</th>
<th>Jun-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: Dell Inc.</td>
<td>Hardware Availability: Jul-2017</td>
<td></td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Nov-2016</td>
<td></td>
</tr>
</tbody>
</table>

### SPEC® Rate2006 = Not Run

### SPEC® Rate_base2006 = 2710

<table>
<thead>
<tr>
<th>Test</th>
<th>Copies</th>
<th>SPECint_rate Base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>bzip2</td>
<td>112</td>
<td>1290</td>
</tr>
<tr>
<td>gcc</td>
<td>112</td>
<td>1930</td>
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<tr>
<td>mcf</td>
<td>112</td>
<td>3380</td>
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<td>gobmk</td>
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<td>2000</td>
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<tr>
<td>hammer</td>
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<td>3910</td>
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<tr>
<td>sjeng</td>
<td>112</td>
<td>2120</td>
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<tr>
<td>libquantum</td>
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<td>29100</td>
</tr>
<tr>
<td>h264ref</td>
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<td>3670</td>
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<tr>
<td>omnetpp</td>
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<td>11180</td>
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<tr>
<td>astar</td>
<td>112</td>
<td>1440</td>
</tr>
<tr>
<td>xalancbmk</td>
<td>112</td>
<td>2740</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Platinum 8180M
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.80 GHz
- **CPU MHz:** 2500
- **FPU:** Integrated
- **CPU(s) enabled:** 56 cores, 2 chips, 28 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1.2 chip
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 1 MB I+D on chip per core
- **L3 Cache:** 38.5 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
- **Disk Subsystem:** 1 x 960 GB SATA SSD
- **Other Hardware:** None

### Software

- **Operating System:** SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default
- **Compiler:** C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux
- **Auto Parallel:** No
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32-bit
- **Peak Pointers:** 32/64-bit
- **Other Software:** Microquill SmartHeap V10.2

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>462.libquantum</td>
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<td>675</td>
<td>3670</td>
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<td>673</td>
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<tr>
<td>471.omnetpp</td>
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<td>473.astar</td>
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<td>2740</td>
<td>282</td>
<td>2740</td>
<td>281</td>
<td>2750</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:
- Sub NUMA Cluster enabled
- Virtualization Technology disabled
- System Profile set to Custom
- CPU Performance set to Maximum Performance
- C States set to Autonomous
- C1E disabled
- Uncore Frequency set to Dynamic
- Energy Efficiency Policy set to Performance
- Memory Patrol Scrub disabled
- Logical Processor enabled
- CPU Interconnect Bus Link Power Management disabled
- PCI ASPM L1 Link Power Management disabled

Sysinfo program /root/cpu2006-1.2_ic17u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-wwko Mon Jun 26 02:02:16 2017
Dell Inc.

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Platform Notes (Continued)

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) Platinum 8180M CPU @ 2.50GHz
  2 "physical id"s (chips)
  112 "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 : 28
    siblings : 56
    physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
               25 26 27 28 29 30
    physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
               25 26 27 28 29 30
    cache size : 39424 KB

From /proc/meminfo
  MemTotal:       394867840 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
  SUSE Linux Enterprise Server 12 SP2

From /etc/*release* /etc/*version*
  SuSE-release:
    NAME="SLES"
    VERSION="12-SP2"
    VERSION_ID="12.2"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12:sp2"

  uname -a:
    (9464f67) x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Jun 25 15:05

  SPEC is set to: /root/cpu2006-1.2_ic17u3

  Filesystem  Type  Size  Used  Avail  Use%  Mounted on
  Continued on next page
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Platform Notes (Continued)
/dev/sda2      xfs     892G   9.5G   883G   2% /
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. 1.0.5 06/19/2017
Memory:
24x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2006-1.2_ic17u3/lib/ia32:/root/cpu2006-1.2_ic17u3/lib/intel64:/root/cpu2006-1.2_ic17u3/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:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
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
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

Continued on next page
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### Base Portability Flags (Continued)

- 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

<table>
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<th>C benchmarks:</th>
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<tbody>
<tr>
<td>-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch</td>
</tr>
<tr>
<td>-qopt-mem-layout-trans=3</td>
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<td>-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch</td>
</tr>
<tr>
<td>-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap</td>
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### Base Other Flags

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<td>403.gcc -Dalloca=_alloca</td>
</tr>
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</table>

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

Tested with SPEC CPU2006 v1.2.  

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