Dell Inc.

PowerEdge R730 (Intel Xeon E5-2680 v4, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECint®_rate2006 = Not Run</th>
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CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

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<th>SPECint Rate</th>
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<tr>
<td>400.perlbench</td>
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<td>401.bzip2</td>
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<tr>
<td>403.gcc</td>
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<td>429.mcf</td>
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<td>456.hmmer</td>
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<td>458.sjeng</td>
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<td>462.libquantum</td>
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<td>464.h264ref</td>
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<tr>
<td>471.omnetpp</td>
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<td>473.astar</td>
<td>56</td>
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<tr>
<td>483.xalancbmk</td>
<td>56</td>
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</tbody>
</table>

**Hardware**
- CPU Name: Intel Xeon E5-2680 v4
- CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
- CPU MHZ: 2400
- FPU: Integrated
- CPU(s) enabled: 28 cores, 2 chips, 14 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: 256 KB I+D on chip per core
- L3 Cache: 35 MB I+D on chip per chip
- Other Cache: None
- Memory: 256 GB (16 x 16 GB 2Rx8 PC4-2400T-R)
- Disk Subsystem: 200 GB SATA SSD
- Other Hardware: None

**Software**
- Operating System: SUSE Linux Enterprise Server 12 SP1 3.12.48-1-default
- Compiler: C/C++ Version 17.0.0.098 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

Test date: Jan-2017
Hardware Availability: Jun-2016
Software Availability: Sep-2016
# SPEC CINT2006 Result

## Dell Inc.

PowerEdge R730 (Intel Xeon E5-2680 v4, 2.40 GHz)

### SPECint_rate2006 = Not Run

### SPECint_rate_base2006 = 1260

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

**Test date:** Jan-2017  
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### Results Table

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</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numaclt mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numaclt 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 Autonomous
- C1E disabled
- Energy Efficient Turbo enabled
- Uncore Frequency set to Dynamic
- Energy Efficiency Policy set to Balanced Performance
- Memory Patrol Scrub disabled

Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux Fri Jan 20 15:07:39 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 R730 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 1260

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

Test date: Jan-2017
Hardware Availability: Jun-2016
Software Availability: Sep-2016

Platform Notes (Continued)

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

From /proc/cpuinfo
- model name: Intel(R) Xeon(R) CPU E5-2680 v4@ 2.40GHz
- 2 "physical id"s (chips)
- 56 "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: 14
  - siblings: 28
  - physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  - physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
- cache size: 17920 KB

From /proc/meminfo
- MemTotal: 264567592 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /usr/bin/lsb_release -d
- SUSE Linux Enterprise Server 12 SP1

From /etc/*release*, /etc/*version*
- SuSE-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:
- Linux linux 3.12.48-1-default #1 SMP Fri Sep 18 13:49:47 UTC 2015 (a83966d)
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 20 15:03

SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 182G 14G 168G 8% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
Continued on next page
Platform Notes (Continued)

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. 2.3.4 11/08/2016
Memory:
  13x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz
  3x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 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/lib32:/root/cpu2006-1.2/lib64:/root/cpu2006-1.2/sh10.2"
The Dell PowerEdge R730 and the PowerEdge R730xd models are electronically equivalent.
The results have been measured on a Dell PowerEdge R730xd model.
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
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

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### Base Portability Flags (Continued)

- 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:

- [http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html)

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

- [http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.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.  