



SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R730 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECint®2006 = 63.7

SPECint_base2006 = 61.8

CPU2006 license: 55

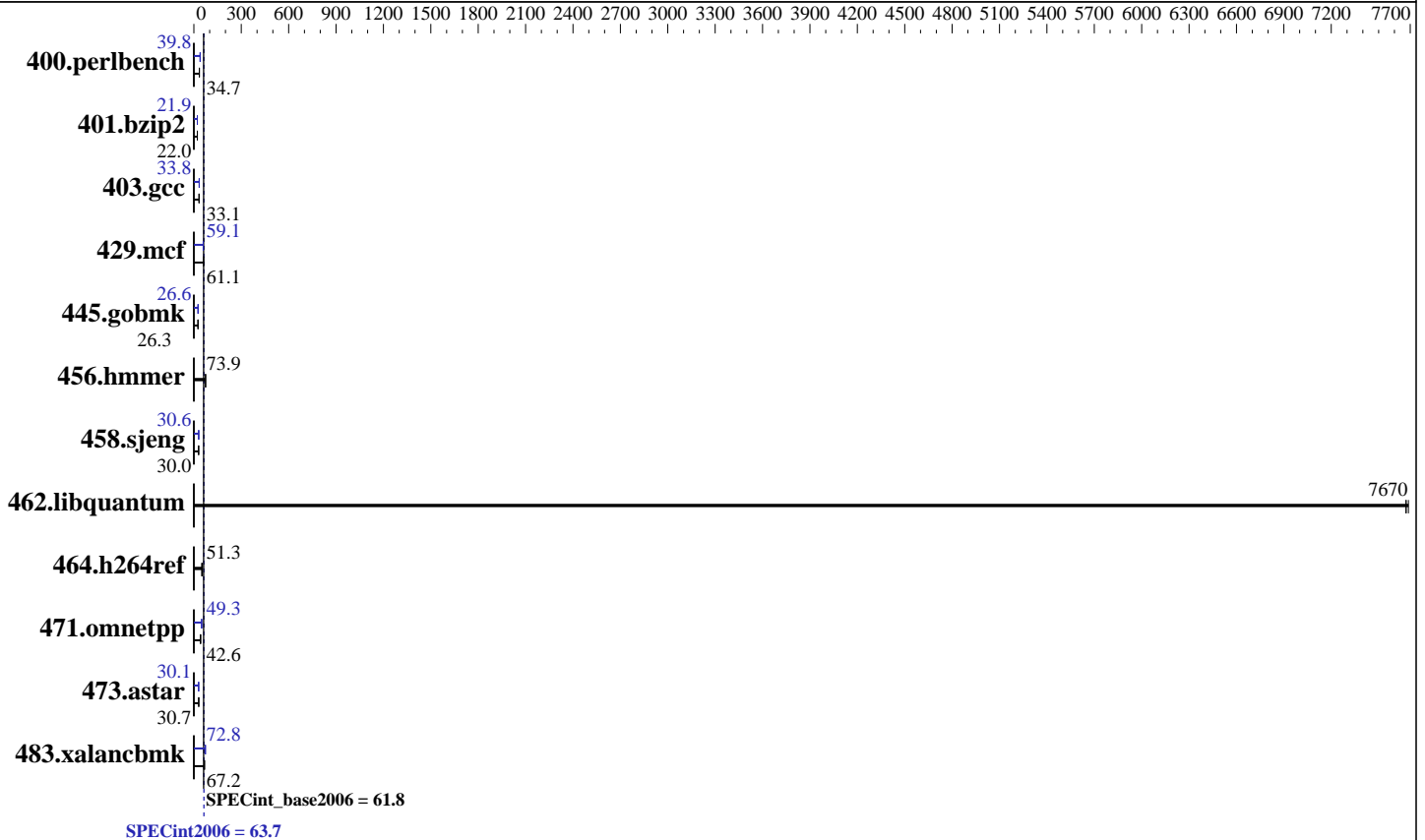
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Mar-2017

Hardware Availability: Oct-2016

Software Availability: Sep-2016



Hardware

CPU Name: Intel Xeon E5-2683 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 32 cores, 2 chips, 16 cores/chip
 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: 40 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx8 PC4-2400T-R)
 Disk Subsystem: 2 x 2000 GB 7200 RPM SAS RAID 0
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12
 3.12.28-4-default
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++
 Compiler for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.2



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 63.7

PowerEdge R730 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECint_base2006 = 61.8

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

Test date: Mar-2017
Hardware Availability: Oct-2016
Software Availability: Sep-2016

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	281	34.8	282	34.7	<u>281</u>	<u>34.7</u>	246	39.7	246	39.8	<u>246</u>	<u>39.8</u>
401.bzip2	436	22.1	<u>439</u>	<u>22.0</u>	441	21.9	441	21.9	440	21.9	<u>441</u>	<u>21.9</u>
403.gcc	<u>244</u>	<u>33.1</u>	244	33.0	243	33.1	238	33.8	237	33.9	<u>238</u>	<u>33.8</u>
429.mcf	149	61.2	<u>149</u>	<u>61.1</u>	150	60.6	155	58.9	154	59.3	<u>154</u>	<u>59.1</u>
445.gobmk	399	26.3	<u>399</u>	<u>26.3</u>	399	26.3	394	26.6	<u>395</u>	<u>26.6</u>	395	26.6
456.hammer	<u>126</u>	<u>73.9</u>	126	73.9	126	73.8	<u>126</u>	<u>73.9</u>	126	73.9	126	73.8
458.sjeng	404	30.0	403	30.0	<u>404</u>	<u>30.0</u>	<u>396</u>	<u>30.6</u>	396	30.6	396	30.6
462.libquantum	2.69	7690	<u>2.70</u>	<u>7670</u>	2.70	7670	2.69	7690	<u>2.70</u>	<u>7670</u>	2.70	7670
464.h264ref	<u>431</u>	<u>51.3</u>	432	51.2	430	51.4	<u>431</u>	<u>51.3</u>	432	51.2	430	51.4
471.omnetpp	<u>147</u>	<u>42.6</u>	145	43.1	153	40.9	128	49.0	<u>127</u>	<u>49.3</u>	127	49.3
473.astar	<u>228</u>	<u>30.7</u>	228	30.7	228	30.8	233	30.1	233	30.1	<u>233</u>	<u>30.1</u>
483.xalancbmk	105	66.0	<u>103</u>	<u>67.2</u>	103	67.3	94.7	72.9	<u>94.8</u>	<u>72.8</u>	94.8	72.8

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

Submit Notes

The config file option 'submit' was used.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS settings:

Snoop Mode set to Opportunistic Snoop Broadcast

Virtualization Technology disabled

System Profile set to Custom

CPU Performance set to Maximum Performance

C States set to Autonomous

C1E disabled

Energy Efficient Turbo disabled

Uncore Frequency set to Dynamic

Energy Efficiency Policy set to Performance

Memory Patrol Scrub disabled

Logical Processor disabled

Sysinfo program /root/previous-cpu2006-1.2/config/sysinfo.rev6993

Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)

running on linux-0171 Wed Mar 1 13:44:44 2017

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>

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

<http://www.spec.org/>

Page 2



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 63.7

PowerEdge R730 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECint_base2006 = 61.8

CPU2006 license: 55

Test date: Mar-2017

Test sponsor: Dell Inc.

Hardware Availability: Oct-2016

Tested by: Dell Inc.

Software Availability: Sep-2016

Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2683 v4 @ 2.10GHz
 2 "physical id"s (chips)
32 "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 : 16
  siblings  : 16
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
cache size : 40960 KB

```

```

From /proc/meminfo
MemTotal:      264567484 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-0171 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Mar 1 11:00

```

SPEC is set to: /root/previous-cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  246G   19G  226G   8% /

```

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

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R730 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECint2006 = 63.7

SPECint_base2006 = 61.8

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

Test date: Mar-2017
Hardware Availability: Oct-2016
Software Availability: Sep-2016

Platform Notes (Continued)

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:

7x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz
9x 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:

KMP_AFFINITY = "granularity=fine,scatter"

LD_LIBRARY_PATH = "/root/previous-cpu2006-1.2/libs/32:/root/previous-cpu2006-1.2/libs/64:/root/previous-cpu2006-1.2/sh10.2"

OMP_NUM_THREADS = "32"

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 with:

echo always > /sys/kernel/mm/transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 63.7

PowerEdge R730 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECint_base2006 = 61.8

CPU2006 license: 55

Test date: Mar-2017

Test sponsor: Dell Inc.

Hardware Availability: Oct-2016

Tested by: Dell Inc.

Software Availability: Sep-2016

Base Optimization Flags

C benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
-auto-p32`

C++ benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh10.2 -lsmartheap64`

Base Other Flags

C benchmarks:

`403.gcc: -Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks (except as noted below):

`icc -m64`

`400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

`445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

C++ benchmarks (except as noted below):

`icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

`473.astar: icpc -m64`

Peak Portability Flags

`400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32`

`401.bzip2: -DSPEC_CPU_LP64`

`403.gcc: -DSPEC_CPU_LP64`

`429.mcf: -DSPEC_CPU_LP64`

`445.gobmk: -D_FILE_OFFSET_BITS=64`

`456.hmmer: -DSPEC_CPU_LP64`

`458.sjeng: -DSPEC_CPU_LP64`

`462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

`464.h264ref: -DSPEC_CPU_LP64`

`471.omnetpp: -D_FILE_OFFSET_BITS=64`

`473.astar: -DSPEC_CPU_LP64`

`483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R730 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECint2006 = 63.7

SPECint_base2006 = 61.8

CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Mar-2017

Hardware Availability: Oct-2016

Software Availability: Sep-2016

Peak Optimization Flags

C benchmarks:

- 400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -qopt-prefetch
- 401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div -auto-ilp32 -qopt-prefetch
- 403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-qopt-malloc-options=3 -auto-ilp32
- 429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-qopt-prefetch -auto-p32
- 445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2)
- 456.hmmer: basepeak = yes
- 458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll4
- 462.libquantum: basepeak = yes
- 464.h264ref: basepeak = yes

C++ benchmarks:

- 471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -qopt-ra-region-strategy=block
-Wl,-z,muldefs -L/sh10.2 -lsmarheap
- 473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmarheap64
- 483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-Wl,-z,muldefs -L/sh10.2 -lsmarheap

Peak Other Flags

C benchmarks:

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R730 (Intel Xeon E5-2683 v4, 2.10 GHz)

SPECint2006 = 63.7

SPECint_base2006 = 61.8

CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Mar-2017

Hardware Availability: Oct-2016

Software Availability: Sep-2016

Peak Other Flags (Continued)

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/Dell-Platform-Flags-PowerEdge13G-revE.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/Dell-Platform-Flags-PowerEdge13G-revE.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Mar 22 10:49:27 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 21 March 2017.