



SPEC® CINT2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 58.5

PowerEdge R730 (Intel Xeon E5-2623 v4, 2.60 GHz)

SPECint_base2006 = 55.9

CPU2006 license: 55

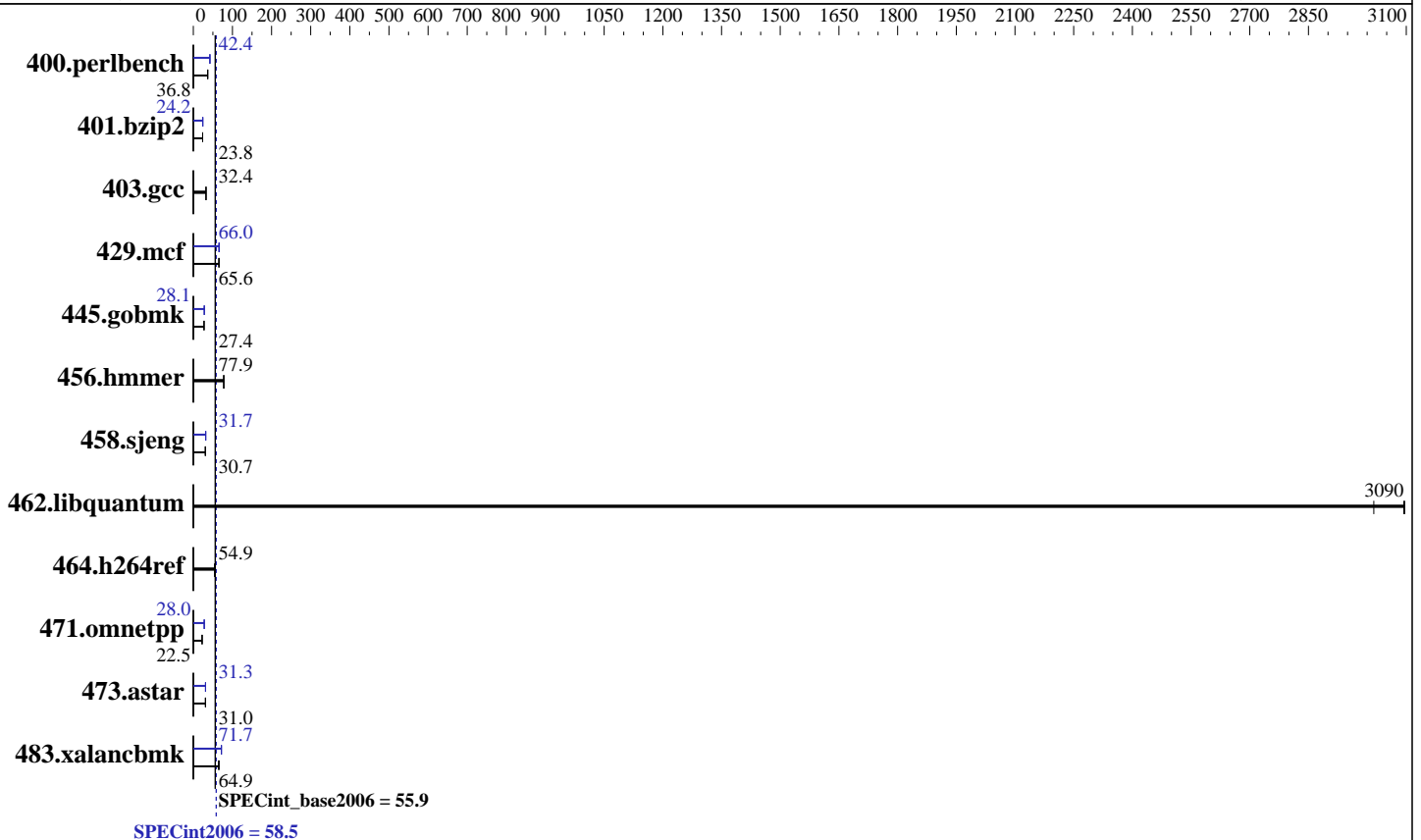
Test date: Feb-2017

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Nov-2016



Hardware

CPU Name: Intel Xeon E5-2623 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx8 PC4-2400T-R, running at 2133 MHz)
 Disk Subsystem: 1 x 120 GB SATA SSD
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux
 Auto Parallel: Yes
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.2



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	266	36.7	266	36.8	265	36.8	<u>231</u>	<u>42.4</u>	230	42.4	231	42.3
401.bzip2	404	23.9	405	23.8	406	23.8	<u>399</u>	<u>24.2</u>	399	24.2	398	24.3
403.gcc	249	32.4	247	32.6	249	32.3	<u>249</u>	<u>32.4</u>	247	32.6	249	32.3
429.mcf	140	65.0	138	66.0	139	65.6	140	65.1	138	66.0	137	66.5
445.gobmk	384	27.3	384	27.4	383	27.4	374	28.1	374	28.1	374	28.0
456.hammer	120	77.6	120	78.0	120	77.9	120	77.6	120	78.0	120	77.9
458.sjeng	392	30.9	394	30.7	394	30.7	382	31.7	382	31.7	382	31.7
462.libquantum	6.69	3100	6.87	3020	6.70	3090	6.69	3100	6.87	3020	6.70	3090
464.h264ref	402	55.0	404	54.8	403	54.9	402	55.0	404	54.8	403	54.9
471.omnetpp	281	22.2	277	22.6	278	22.5	<u>224</u>	<u>28.0</u>	224	27.9	223	28.0
473.astar	226	31.0	225	31.2	227	31.0	<u>224</u>	<u>31.3</u>	227	30.9	224	31.4
483.xalancbmk	107	64.6	106	64.9	105	66.0	95.8	72.0	96.2	71.7	96.2	71.7

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 enabled
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on linux-b0uv Thu Feb 2 16:52:35 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>

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Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2623 v4 @ 2.60GHz
 2 "physical id"s (chips)
16 "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 : 4
  siblings  : 8
  physical 0: cores 0 1 2 3
  physical 1: cores 0 1 2 3
cache size : 10240 KB

```

```

From /proc/meminfo
MemTotal:      264568092 kB
HugePages_Total:    0
Hugepagesize:    2048 kB

```

```

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

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# 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-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-b0uv 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Feb 2 16:48

```

SPEC is set to: /root/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   110G  22G   89G  20% /

```

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

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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. 2.2.5 09/06/2016

Memory:

4x 00AD00B300AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz, configured at 2133 MHz

11x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz, configured at 2133 MHz

1x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 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:

KMP_AFFINITY = "granularity=fine,scatter"

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

OMP_NUM_THREADS = "8"

The Dell PowerEdge R730 and the PowerEdge R730xd models are electronically equivalent.

The results have been measured on a Dell PowerEdge R730 model.

Binaries compiled on a system with 1x Intel Core i7-4790K 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.hmmer: -DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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Base Portability Flags (Continued)

464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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

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Peak Portability Flags (Continued)

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

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: basepeak = yes

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 -lsmartheap

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Peak Optimization Flags (Continued)

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

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-Wl,-z,muldefs -L/sh10.2 -lsmartheap

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-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>

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

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