



SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 67.8

PowerEdge R630 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_base2006 = 64.9

CPU2006 license: 55

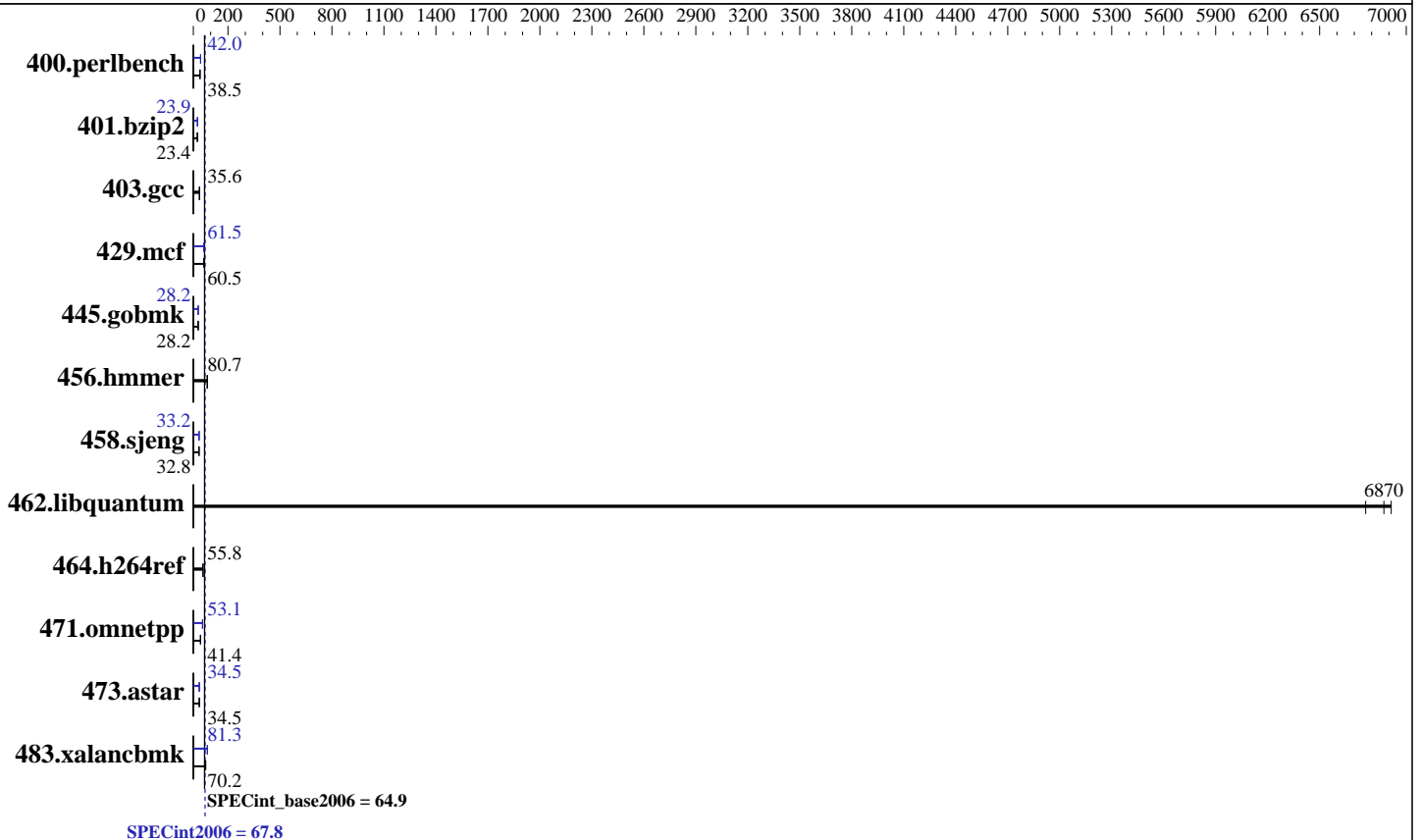
Test date: Mar-2016

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Nov-2015



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: 512 GB (16 x 32 GB 2Rx4 PC4-2400T-R)
 Disk Subsystem: 1 x 480 GB SATA SSD
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)
 3.10.0-327.el7.x86_64
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE 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



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 67.8

PowerEdge R630 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_base2006 = 64.9

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

Test date: Mar-2016
Hardware Availability: Mar-2016
Software Availability: Nov-2015

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	253	38.6	254	38.4	254	38.5	233	42.0	233	42.0	232	42.1
401.bzip2	415	23.3	412	23.4	413	23.4	404	23.9	403	23.9	404	23.9
403.gcc	229	35.2	226	35.6	226	35.7	229	35.2	226	35.6	226	35.7
429.mcf	151	60.5	152	60.2	149	61.1	148	61.7	148	61.5	150	60.6
445.gobmk	373	28.1	372	28.2	372	28.2	371	28.2	372	28.2	372	28.2
456.hammer	116	80.7	116	80.7	116	80.7	116	80.7	116	80.7	116	80.7
458.sjeng	369	32.8	369	32.8	369	32.8	364	33.2	365	33.2	364	33.2
462.libquantum	3.00	6910	3.02	6870	3.06	6770	3.00	6910	3.02	6870	3.06	6770
464.h264ref	396	55.8	398	55.6	396	55.9	396	55.8	398	55.6	396	55.9
471.omnetpp	149	41.8	151	41.4	151	41.3	118	52.9	118	53.1	117	53.5
473.astar	203	34.5	203	34.5	206	34.0	204	34.4	203	34.6	203	34.5
483.xalancbmk	96.0	71.9	98.3	70.2	98.8	69.8	84.9	81.3	84.9	81.3	84.8	81.3

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 Power Management set to Maximum Performance
 Energy Efficient Turbo disabled
 Memory Patrol Scrub disabled
 Cstates autonomous/C1E enabled
 Energy Efficient Policy set to Performance
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
 running on localhost.localdomain Mon Mar 21 11:59:57 2016

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 E5-2680 v4@ 2.40GHz
Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 67.8

PowerEdge R630 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_base2006 = 64.9

CPU2006 license: 55

Test date: Mar-2016

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Nov-2015

Platform Notes (Continued)

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 : 35840 KB
```

From /proc/meminfo

```
MemTotal:      528281564 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

From /etc/*release* /etc/*version*

```
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server
```

uname -a:

```
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Mar 21 11:58

SPEC is set to: /root/cpu2006-1.2

```
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2        xfs       256G      10G  247G   4% /
```

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. 2.0.1 02/12/2016

Memory:

```
16x 00AD063200AD HMA84GR7MFR4N-UH 32 GB 2 rank 2400 MHz
8x Not Specified Not Specified
```

(End of data from sysinfo program)



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 67.8

PowerEdge R630 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_base2006 = 64.9

CPU2006 license: 55

Test date: Mar-2016

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Nov-2015

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/sh"

OMP_NUM_THREADS = "28"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

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

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 -opt-prefetch -auto-p32

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32

-Wl,-z,muldefs -L/sh -lsmarthheap64



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 67.8

PowerEdge R630 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_base2006 = 64.9

CPU2006 license: 55

Test date: Mar-2016

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Nov-2015

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_2016/linux/compiler/lib/ia32_lin

445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):

icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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.hmmmer: -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: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
-ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 67.8

PowerEdge R630 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_base2006 = 64.9

CPU2006 license: 55

Test date: Mar-2016

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Nov-2015

Peak Optimization Flags (Continued)

401.bzip2 (continued):
 -opt-prefetch -ansi-alias

403.gcc: basepeak = yes

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
 -opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
 -prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias

456.hmmer: basepeak = yes

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
 -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
 -par-num-threads=1(pass 1) -prof-use(pass 2)
 -opt-ra-region-strategy=block -ansi-alias
 -Wl,-z,muldefs -L/sh -lsmartheap

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

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
 -ansi-alias -Wl,-z,muldefs -L/sh -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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml>



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 67.8

PowerEdge R630 (Intel Xeon E5-2680 v4, 2.40 GHz)

SPECint_base2006 = 64.9

CPU2006 license: 55

Test date: Mar-2016

Test sponsor: Dell Inc.

Hardware Availability: Mar-2016

Tested by: Dell Inc.

Software Availability: Nov-2015

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 Tue Jul 12 11:04:03 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 July 2016.