



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 54.3

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

SPECint\_base2006 = 50.5

CPU2006 license: 55

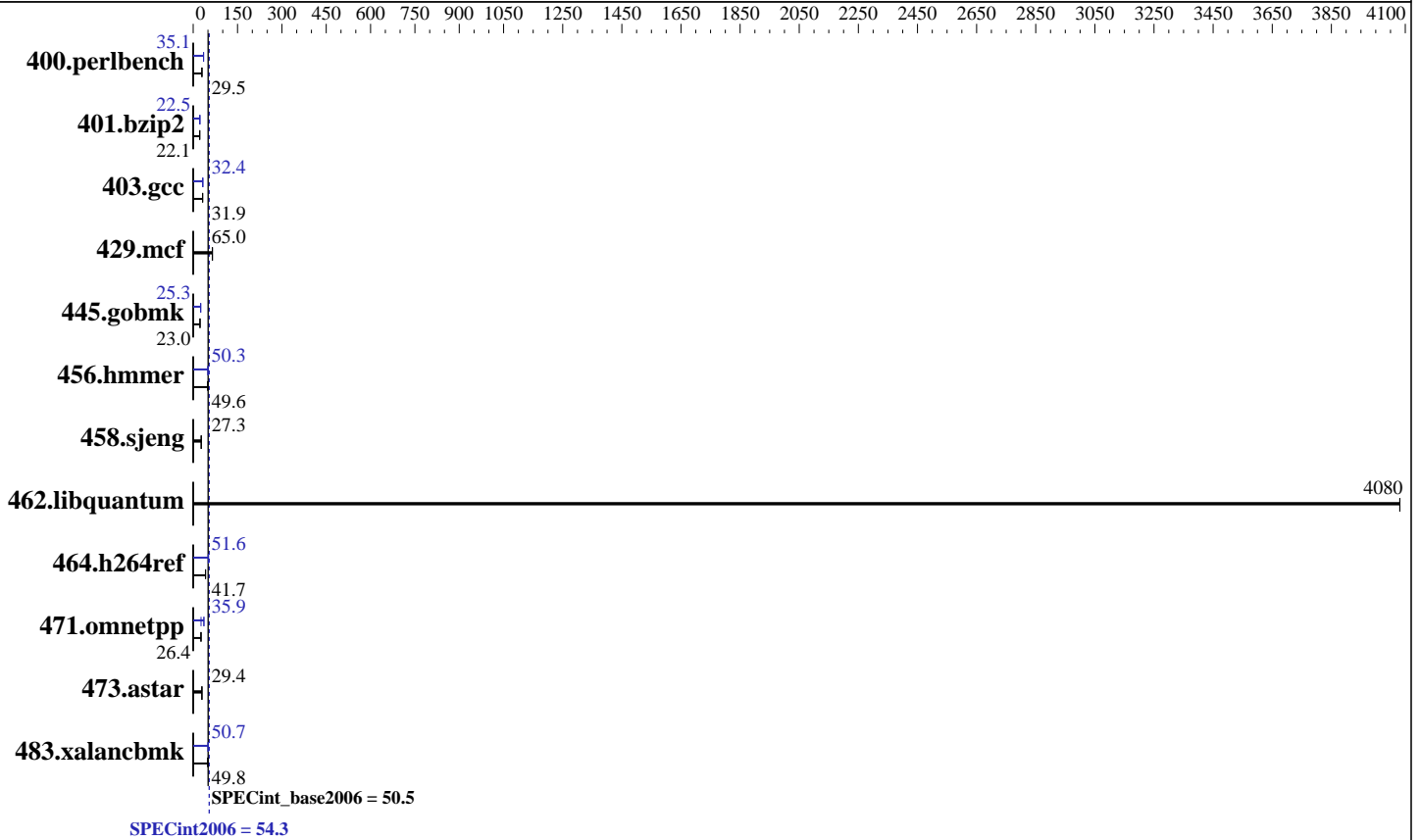
Test date: Aug-2012

Test sponsor: Dell Inc.

Hardware Availability: Jul-2012

Tested by: Dell Inc.

Software Availability: Jun-2012



## Hardware

CPU Name: Intel Xeon E5-4650  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2700  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip  
 CPU(s) orderable: 2,4 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: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 x 300 GB 15000 RPM SAS  
 Other Hardware: None

## Software

Operating System: Red Hat Enterprise Linux Server release 6.3 (Santiago)  
 2.6.32-279.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE 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 V9.01



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 54.3

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

SPECint\_base2006 = 50.5

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

Test date: Aug-2012  
Hardware Availability: Jul-2012  
Software Availability: Jun-2012

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>331</b>	<b>29.5</b>	331	29.5	331	29.5	<b>278</b>	<b>35.1</b>	278	35.2	280	34.9
401.bzip2	438	22.0	<b>437</b>	<b>22.1</b>	437	22.1	430	22.5	429	22.5	<b>429</b>	<b>22.5</b>
403.gcc	252	31.9	252	31.9	<b>252</b>	<b>31.9</b>	<b>249</b>	<b>32.4</b>	248	32.4	249	32.4
429.mcf	140	65.2	141	64.6	<b>140</b>	<b>65.0</b>	140	65.2	141	64.6	<b>140</b>	<b>65.0</b>
445.gobmk	455	23.1	<b>455</b>	<b>23.0</b>	456	23.0	<b>414</b>	<b>25.3</b>	414	25.3	415	25.3
456.hammer	189	49.4	<b>188</b>	<b>49.6</b>	188	49.6	185	50.3	<b>185</b>	<b>50.3</b>	186	50.3
458.sjeng	<b>444</b>	<b>27.3</b>	444	27.3	444	27.3	<b>444</b>	<b>27.3</b>	444	27.3	444	27.3
462.libquantum	5.08	4080	<b>5.08</b>	<b>4080</b>	5.08	4080	5.08	4080	<b>5.08</b>	<b>4080</b>	5.08	4080
464.h264ref	<b>530</b>	<b>41.7</b>	529	41.9	533	41.5	<b>429</b>	<b>51.6</b>	435	50.9	426	52.0
471.omnetpp	238	26.3	236	26.5	<b>237</b>	<b>26.4</b>	236	26.5	171	36.6	<b>174</b>	<b>35.9</b>
473.astar	237	29.6	<b>239</b>	<b>29.4</b>	239	29.3	237	29.6	<b>239</b>	<b>29.4</b>	239	29.3
483.xalancbmk	139	49.7	<b>139</b>	<b>49.8</b>	139	49.8	137	50.4	<b>136</b>	<b>50.7</b>	136	50.8

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

## Operating System Notes

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

## Platform Notes

```

System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost set to Enabled
C States/C1E set to Enabled
Logical processor set to Disabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Sun Aug 12 09:50:07 2012

```

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 E5-4650 0 @ 2.70GHz
4 "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 : 8
siblings : 8

```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 54.3

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

SPECint\_base2006 = 50.5

CPU2006 license: 55

Test date: Aug-2012

Test sponsor: Dell Inc.

Hardware Availability: Jul-2012

Tested by: Dell Inc.

Software Availability: Jun-2012

## Platform Notes (Continued)

```

physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
physical 2: cores 0 1 2 3 4 5 6 7
physical 3: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

```

From /proc/meminfo

```

MemTotal:      264482264 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

/usr/bin/lsb\_release -d

Red Hat Enterprise Linux Server release 6.3 (Santiago)

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

```

redhat-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.3 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

uname -a:

```

Linux localhost.localdomain 2.6.32-279.el6.x86_64 #1 SMP Wed Jun 13 18:24:36
EDT 2012 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Aug 12 09:48 last=5

SPEC is set to: /root/cpu2006-1.2

```

Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal        ext4      250G  8.2G  230G   4% /

```

Additional information from dmidecode:

Memory:

```

15x 00AD00B300AD HMT31GR7BFR4C-PB 8 GB 1600 MHz 2 rank
7x 00AD04B300AD HMT31GR7BFR4C-PB 8 GB 1600 MHz 2 rank
10x 00CE00B300CE M393B1K70DH0-CK0 8 GB 1600 MHz 2 rank

```

(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"
OMP_NUM_THREADS = "32"

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop\_caches

The Dell PowerEdge R820 and

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 3



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 54.3

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

SPECint\_base2006 = 50.5

CPU2006 license: 55

Test date: Aug-2012

Test sponsor: Dell Inc.

Hardware Availability: Jul-2012

Tested by: Dell Inc.

Software Availability: Jun-2012

## General Notes (Continued)

the Bull NovaScale R470 F3 models are electronically equivalent.  
The results have been measured on a Dell PowerEdge R820 model

## 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

## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs  
-L/smartheap -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 54.3

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

SPECint\_base2006 = 50.5

CPU2006 license: 55

Test date: Aug-2012

Test sponsor: Dell Inc.

Hardware Availability: Jul-2012

Tested by: Dell Inc.

Software Availability: Jun-2012

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

429.mcf: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

473.astar: -DSPEC\_CPU\_LP64

483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-ansi-alias

401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch  
-ansi-alias

403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 54.3

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

SPECint\_base2006 = 50.5

CPU2006 license: 55

Test date: Aug-2012

Test sponsor: Dell Inc.

Hardware Availability: Jul-2012

Tested by: Dell Inc.

Software Availability: Jun-2012

## Peak Optimization Flags (Continued)

456.hmmr: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias

458.sjeng: basepeak = yes

462.libquantum: basepeak = yes

464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/smartheap -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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.xml>



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 54.3

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

SPECint\_base2006 = 50.5

CPU2006 license: 55

Test date: Aug-2012

Test sponsor: Dell Inc.

Hardware Availability: Jul-2012

Tested by: Dell Inc.

Software Availability: Jun-2012

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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 11:05:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 29 August 2012.