



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R820 (Intel Xeon E5-4650 v2, 2.40 GHz)

**SPECint®2006 = 50.8**

**SPECint\_base2006 = 47.3**

CPU2006 license: 55

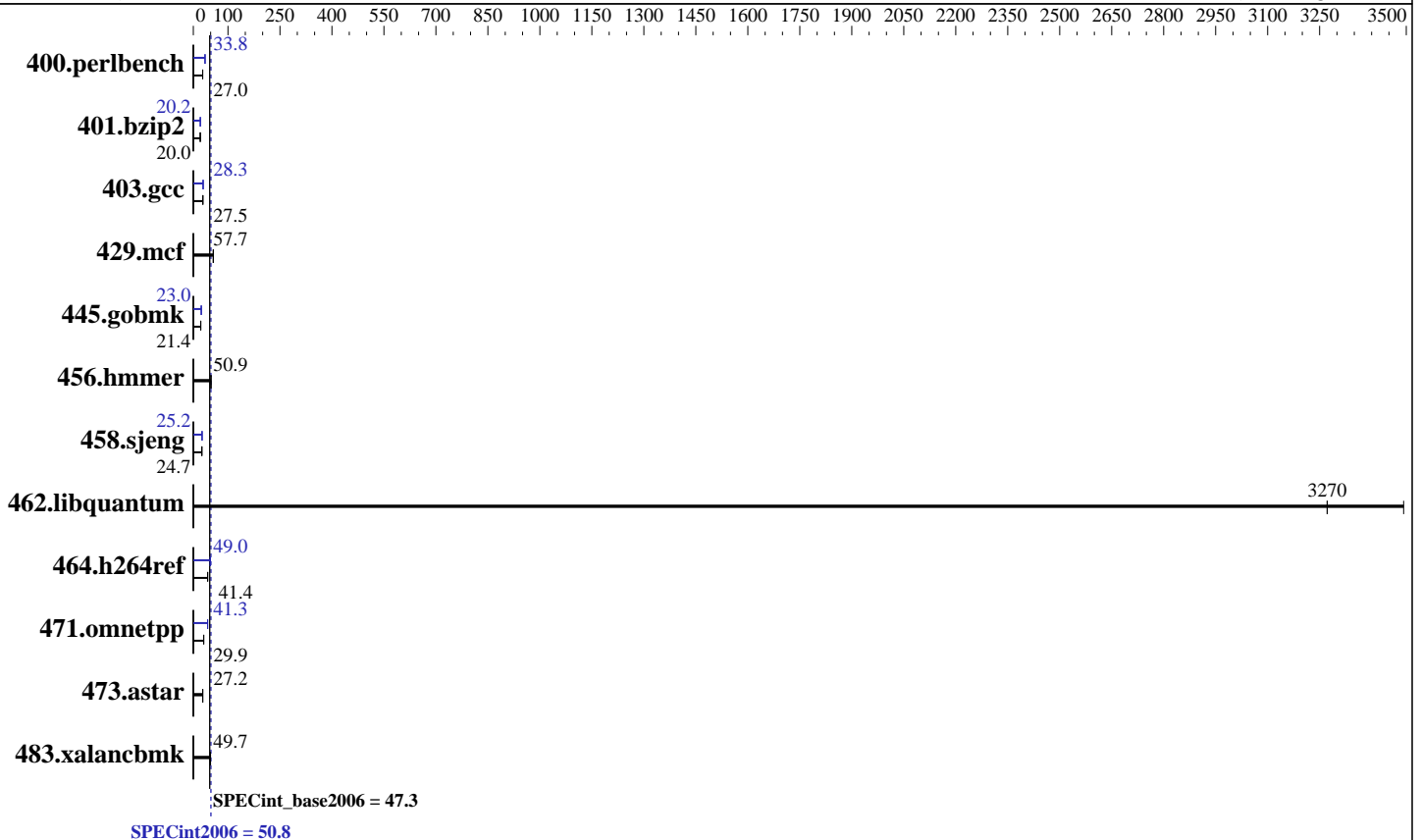
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Oct-2013

Hardware Availability: Mar-2014

Software Availability: Aug-2013



### Hardware

CPU Name: Intel Xeon E5-4650 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 40 cores, 4 chips, 10 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: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 512 GB (32 x 16 GB 2Rx4 PC3-14900R-13, ECC)  
 Disk Subsystem: 1 x 200 GB SAS SSD  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) 3.0.76-0.11-default  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext2  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 50.8

PowerEdge R820 (Intel Xeon E5-4650 v2, 2.40 GHz)

SPECint\_base2006 = 47.3

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

Test date: Oct-2013  
Hardware Availability: Mar-2014  
Software Availability: Aug-2013

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	362	27.0	361	27.0	<b>361</b>	<b>27.0</b>	<b>289</b>	<b>33.8</b>	289	33.8	290	33.7
401.bzip2	<b>482</b>	<b>20.0</b>	481	20.1	482	20.0	477	20.2	477	20.2	<b>477</b>	<b>20.2</b>
403.gcc	292	27.6	<b>293</b>	<b>27.5</b>	293	27.4	285	28.2	<b>285</b>	<b>28.3</b>	284	28.3
429.mcf	<b>158</b>	<b>57.7</b>	158	57.6	158	57.8	<b>158</b>	<b>57.7</b>	158	57.6	158	57.8
445.gobmk	488	21.5	<b>489</b>	<b>21.4</b>	491	21.4	457	23.0	457	23.0	<b>457</b>	<b>23.0</b>
456.hammer	183	50.9	<b>183</b>	<b>50.9</b>	183	50.9	183	50.9	<b>183</b>	<b>50.9</b>	183	50.9
458.sjeng	500	24.2	<b>489</b>	<b>24.7</b>	489	24.8	<b>480</b>	<b>25.2</b>	479	25.2	480	25.2
462.libquantum	5.93	3490	<b>6.33</b>	<b>3270</b>	6.33	3270	5.93	3490	<b>6.33</b>	<b>3270</b>	6.33	3270
464.h264ref	535	41.4	<b>535</b>	<b>41.4</b>	537	41.2	<b>451</b>	<b>49.0</b>	452	49.0	451	49.1
471.omnetpp	209	29.9	208	30.0	<b>209</b>	<b>29.9</b>	152	41.1	<b>151</b>	<b>41.3</b>	151	41.5
473.astar	258	27.2	259	27.1	<b>259</b>	<b>27.2</b>	258	27.2	259	27.1	<b>259</b>	<b>27.2</b>
483.xalancbmk	<b>139</b>	<b>49.7</b>	142	48.7	139	49.7	<b>139</b>	<b>49.7</b>	142	48.7	139	49.7

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

```

BIOS settings:
Virtualization Technology disabled
Execute Disable disabled
Logical Processor disabled
System Profile set to Performance
Sysinfo program /root/cpu2006.1.2.ic13/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Wed Oct 23 10:53:22 2013

```

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 v2 @ 2.40GHz
 4 "physical id"s (chips)
40 "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 : 10
siblings  : 10
physical 0: cores 0 1 2 3 4 8 9 10 11 12

```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Dell Inc.**

**SPECint2006 = 50.8**

PowerEdge R820 (Intel Xeon E5-4650 v2,  
2.40 GHz)

**SPECint\_base2006 = 47.3**

**CPU2006 license:** 55

**Test date:** Oct-2013

**Test sponsor:** Dell Inc.

**Hardware Availability:** Mar-2014

**Tested by:** Dell Inc.

**Software Availability:** Aug-2013

## Platform Notes (Continued)

```
physical 1: cores 0 1 2 3 4 8 9 10 11 12
physical 2: cores 0 1 2 3 4 8 9 10 11 12
physical 3: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB
```

From /proc/meminfo

```
MemTotal:      529392212 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

/usr/bin/lsb\_release -d

```
SUSE Linux Enterprise Server 11 (x86_64)
```

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

```
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3
```

uname -a:

```
Linux linux 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990)
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Oct 23 10:48 last=S

SPEC is set to: /root/cpu2006.1.2.ic13

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext2  175G  12G  163G   7% /
```

Additional information from dmidecode:

```
BIOS Dell Inc. 2.0.17 10/01/2013
Memory:
32x 00AD00B300AD HMT42GR7AFR4C-RD 16 GB 1866 MHz
```

(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.ic13/libs/32:/root/cpu2006.1.2.ic13/libs/64:/root/cpu2006.1.2.ic13/sh"
OMP_NUM_THREADS = "40"
```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB  
memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

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

Filesystem page cache cleared with:

```
echo 1> /proc/sys/vm/drop_caches
```

runspec command invoked through numactl i.e.:

```
numactl --interleave=all runspec <etc>
```



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R820 (Intel Xeon E5-4650 v2,  
2.40 GHz)

**SPECint2006 = 50.8**

**SPECint\_base2006 = 47.3**

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

**Test date:** Oct-2013  
**Hardware Availability:** Mar-2014  
**Software Availability:** Aug-2013

## 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:  
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32  
  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R820 (Intel Xeon E5-4650 v2,  
2.40 GHz)

**SPECint2006 = 50.8**

**SPECint\_base2006 = 47.3**

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test date:** Oct-2013

**Hardware Availability:** Mar-2014

**Software Availability:** Aug-2013

## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

471.omnetpp: `icpc -m32`

## 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_LP64 -DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-xSSE4.2(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: `-xSSE4.2(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: `-xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias`

456.hmmer: `basepeak = yes`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Dell Inc.**

**SPECint2006 = 50.8**

PowerEdge R820 (Intel Xeon E5-4650 v2,  
2.40 GHz)

**SPECint\_base2006 = 47.3**

**CPU2006 license:** 55

**Test date:** Oct-2013

**Test sponsor:** Dell Inc.

**Hardware Availability:** Mar-2014

**Tested by:** Dell Inc.

**Software Availability:** Aug-2013

## Peak Optimization Flags (Continued)

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(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: -xSSE4.2(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/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## 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-ic14.0-official-linux64.20140128.html>  
<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>  
<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 23:18:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 22 April 2014.